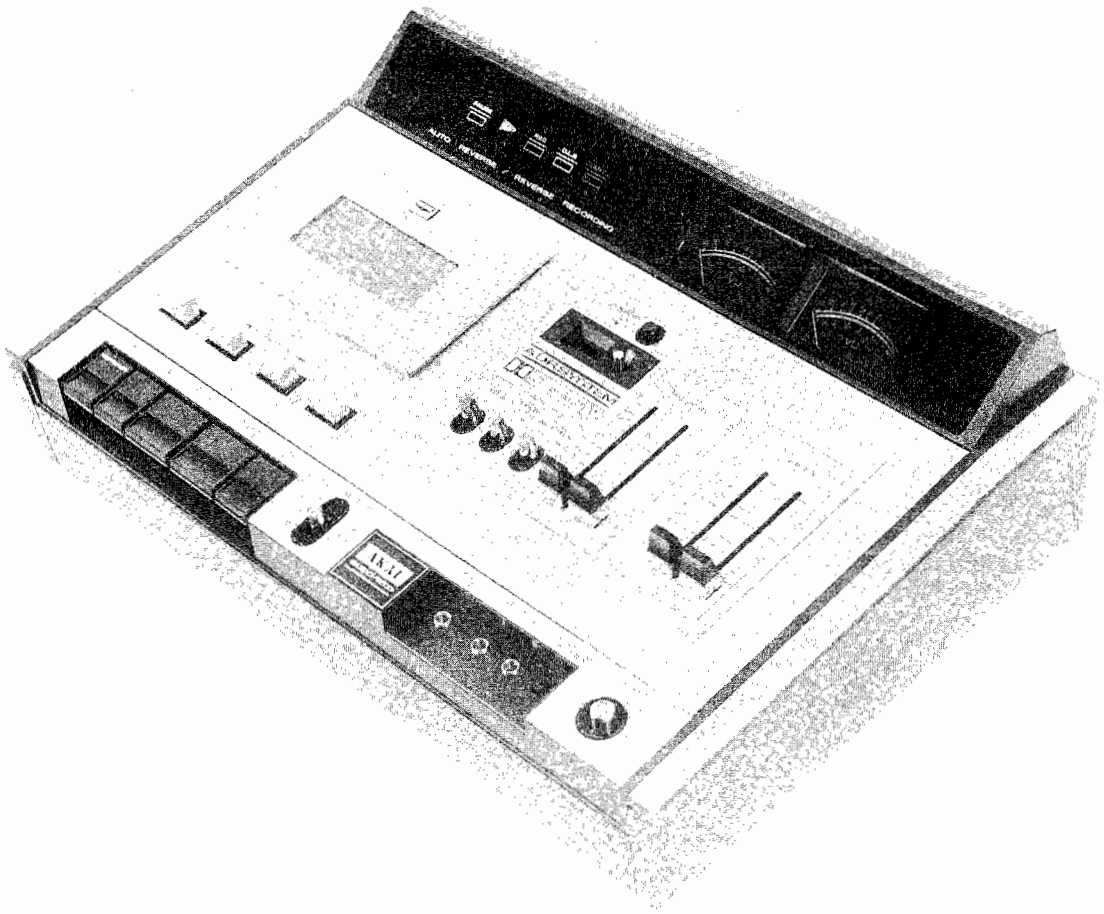
SERVICE MANUAL
PARTS LIST

PRIDE IN QUALITY

AKAI CASSETTE TAPE DECK

MODEL GX-75D



CASSETTE TAPE DECK

MODEL GXC-75D

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SECTION 1

SERVICE MANUAL

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I. SPECIFICATIONS

An asterisk next to a figure indicates the minimum guaranteed performance.

TRACK SYSTEM		4-track, 2-channel stereo Recording/Playback system
TAPE SPEED		1-7/8 ips. ±3%(at playback of 1,000 Hz test tape)
WOW AND FLUTTER		Less than 0.1% R.M.S.
	FWD.	*Less than 0.27% R.M.S. (at playback of 3 kHz test tape)
	REV.	*Less than 0.30% R.M.S. (at playback of 3 kHz test tape)
TOTAL WOW AND FLUTTER		*Less than 0.35% R.M.S. (3 kHz Recording/Playback)
FREQUENCY RESPONSE		(at 1,000 Hz –20VU recording)
	CHROME TAPE	30 to 16,000 Hz (*50 to 14,000 Hz±4 dB)
	LOW NOISE TAPE	30 to 14,000 Hz (*50 to 13,000 Hz±4 dB)
DISTORTION		Less than 1.0% at 1,000 Hz "0" VU recording
	CHROME TAPE	*Less than 4.0% at 1,000 Hz "0" VU recording
	LOW NOISE TAPE	*Less than 3.0% at 1,000 Hz "0" VU recording
OUTPUTS	LINE	0±1.5 dB(0.775V), using a 333 Hz "0" VU pre-recorded tape (*REV.: Within 2 dB to FWD. mode)
	PHONE	30 mV at 8Ω
	DIN	0.4V
INPUTS	MIC	More than 0.5 mV Impedance: 4.7 kΩ
	LINE	More than 60 mV Impedance: 200 kΩ
	DIN	More than 5 mV(10W) and 90 mV(high)
SIGNAL TO NOISE RATIO		Better than 50 dB (*Better than 43 dB at FWD. mode; Better than 43 dB at REV. mode)
TOTAL SIGNAL TO NOISE RATIO		Better than 42 dB
CROSS TALK		Better than 25 dB (at 1,000 Hz +3 VU recording)
ERASE RATIO		Better than 65 dB (at 1,000 Hz +3 VU recording)
BIAS FREQUENCY		61±3 kHz
BIAS LEAK		Less than –20 VU
HIGH FREQUENCY DEVIATION		Within 10 dB (Normal and Reverse playback of tape recorded at 10 kHz Normal recording and Normal and Reverse playback of tape recorded at 10 kHz reverse recording)
RECORDING CAPACITY		1 hour stereo recording, using a C-60 cassette tape
F.FWD. AND FWD. TIME		46 sec. using a C-60 cassette tape
HEADS	RECORDING/PLAYBACK HEAD	4-track, 2-channel GX Recording/Playback Head Type: P4-350 Gap: 1.4 ~ 1.9 microns Impedance: 1 kΩ±20% at 1 kHz D.C. Resistance: 179Ω
	ERASE HEAD	2-track, 1-channel Erase Head Type: E4-160 Gap: Double gap Impedance: 190Ω±10% at 60 kHz D.C. Resistance: 2.5Ω
MOTOR		Hysteresis Synchronous outer-roter motor Type: HM1-12CS Revolutions: 1,500/1,800 r.p.m. at 50/60 Hz
TRANSISTORS		2SA628 . . . 2 — 2SC711(F) (G) . . . 5 2SC711(E) (F) (G) . . . 18 — 2SC1211(D) (E) . . . 2 2SC1312 . . . 4 — 2SC1312R(G) (H) . . . 4 2SC1312S(G) (H) . . . 2 — 2SD361(D) (E) . . . 2
F.E.T.		2SK30A(GR) . . . 2
DIODES		1N34A . . . 8 — 10D05 . . . 5 WG085 . . . 2 — WZ210 . . . 1 WG599 . . . 6 — 1S2473VE . . . 22
POWER SUPPLY		100 to 240V A.C. 50/60 Hz for Universal 240V A.C. 50 Hz for WG Models 120V A.C. 60 Hz for CSA Models 220V A.C. 50 Hz for CEE Models
POWER CONSUMPTION		25W
DIMENSIONS		460(W) x 146(H) x 302(D)mm (18.1" x 5.8" x 11.9")
WEIGHT		8.0 kg (17.6 lbs.)

NOTE: Specifications subject to change without notice.

II. D.C. RESISTANCE OF VARIOUS COILS

The D.C. Resistance values shown in this chart are average values.

PART	DESIGNATION	D.C. RESISTANCE
MOTOR	HM1-12CS	Between RED-BLU 185Ω Between YLW-RED 193Ω
STOP SOLENOID PLUNGER	0730 THT12	15 M
REC./P.B. HEAD	P4-350	179 Ω
ERASE HEAD	E4-160	2.5 Ω
OSCILLATOR COIL	OT-915	Between 1–3 0.3 Ω Between 4–6 1.2 Ω Between 7–9 8.3 Ω
HEAD PHONE TRANSFORMER	N16-535S	Primary 565 Ω Secondary 0.95 Ω
POWER TRANSFORMER	CPT-1D	Refer to Fig. 1

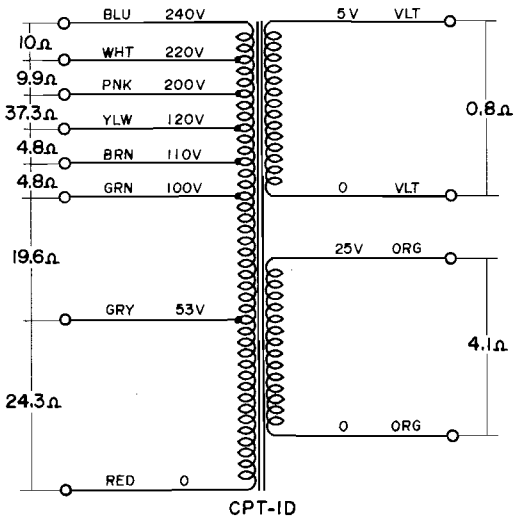


Fig. 1

III. MEASURING METHOD

1. TAPE SPEED DEVIATION

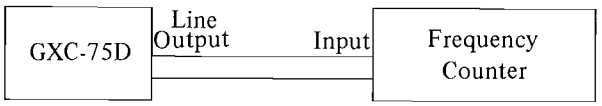


Fig. 2

As shown in Fig. 2 connect a Frequency Counter to the Line Output of Model GXC-75D. Playback a 1,000 Hz pre-recorded test tape. Take a Frequency Counter reading at the biginning, middle, and end of tape winding during playback, and obtain the tape speed deviation from the following formula.

TAPE SPEED DEVIATION (%) =

$$\frac{\text{Frequency counter reading (Hz)} - 1{,}000\ \text{Hz}}{1{,}000\ \text{Hz}} \times 100$$

2. WOW AND FLUTTER

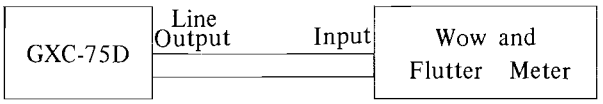


Fig. 3

Method A

As shown in Fig. 3, connect a Wow and Flutter Meter to the Line Output of Model GXC-75D. Playback a 3,000 Hz pre-reocrded test tape and take a Wow and Flutter reading at the beginning, middle, and end of tape winding during playback.
The maximum value of these respective readings will represent the Wow and Flutter.

Method B

Supply a 3,000 Hz sine wave signal from an Audio Frequency Oscillator and make a recording on a blank tape at the beginning; middle, and end of tape winding. Rewind and playback the resultant signal. Measure Wow and Flutter with a Wow and Flutter Meter, (The Wow and Flutter value of method B will be close to $\sqrt{2}$ times of method A.)

3. FREQUENCY RESPONSE

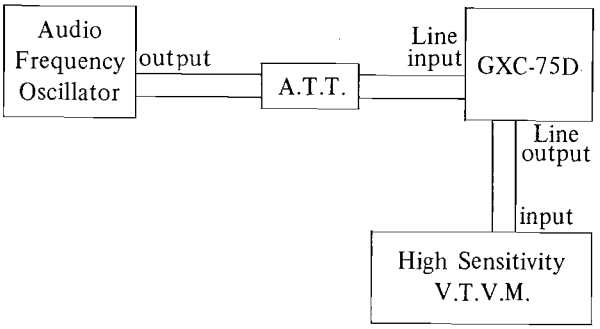


Fig. 4

For measuring Frequency Response, connect instruments as shown in Fig. 4 and proceed as follows.

1) Supply a 1,000 Hz sine wave signal to the Line Input of Model GXC-75D from an Audio Frequency Oscillator through an Attenuator.
2) Set Deck to recording mode and turn recording level control to maximum. Adjust Attenuator to obtain a 0 dBm High Sensitivity V.T.V.M. reading.
3) Under conditions described in 2) above, readjust Attenuator so that the Line Output is -20 dBm, and record 50 to 13,000 Hz spot frequencies.
4) Take High Sensitivity V.T.V.M. spot frequency readings and plot the values on a graph.

NOTE: When measuring Frequency Response, new tape should be used.

4. SIGNAL TO NOISE RATIO

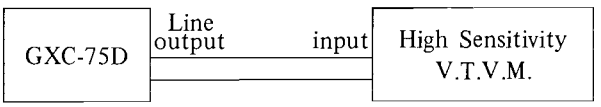


Fig. 5

As shown in Fig. 5, connect a High Sensitivity V.T.V.M. to the Line Output of Model GXC-75D. Playback a 250 Hz OVU pre-recorded test tape and measure the output level. Then remove the tape and measure the noise level under the same condition. Convert each of the measured values into decibels.

5. TOTAL HARMONIC DISTORTION FACTOR

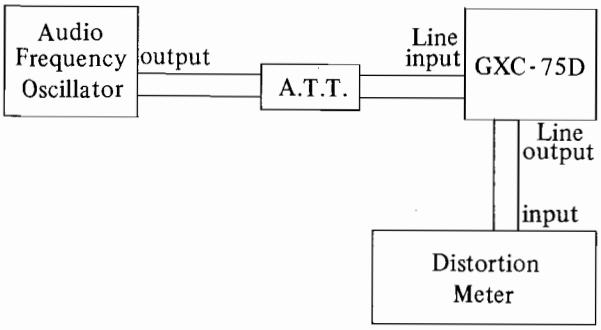


Fig. 6

Connect the measuring instruments as shown in Fig. 6 and record a 1,000 Hz sine wave signal at 0VU. Playback the resultant signal and measure the overall distortion factor.

NOTE: 1) At this time distortion of Audio Frequency Oscillator must be sufficiently small.
2) When measuring the distortion factor, new tape should be used.

6. CROSS TALK (Cross talk between the tracks)

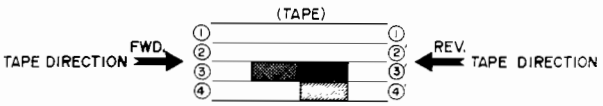


Fig. 7

As shown in Fig. 7, first record a 1,000 Hz sine wave signal on track No. 3 at +3VU level. Next, record under a non-input condition. Then playback the tape on track No. 3 and 1' (reversed condition of tape) through the B.P.F. (1,000 Hz Band Pass Filter, sensitivity 1,000 Hz, ratio 1:1) and obtain the ratio from the following formula.

$$C = 20 \log \frac{E_0}{E_2 - E_1} \text{ (dB)}$$

where,

C = Desired cross talk ratio (dB)
E_0 = 1,000 Hz signal output level (V)
E_2 = 1,000 Hz cross talk level (V)
E_1 = Non-input cross talk level (V)

7. ERASE RATIO

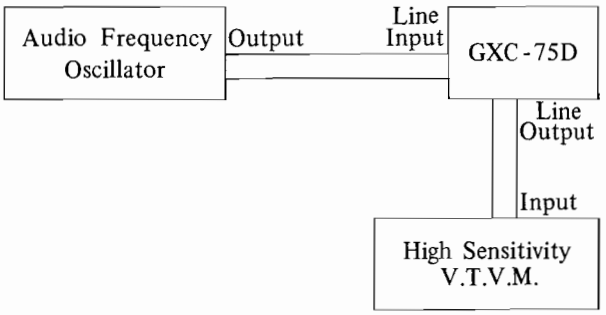


Fig. 8

As shown in Fig. 8, connect a High Sensitivity V.T.V.M. to the Line Output. Playback a virgin tape and take a V.T.V.M. reading of the output level.
Next record a 1,000 Hz sine wave signal at +3VU, then playback this recorded signal and take a V.T.V.M. reading of the output level. Next, using this pre-recorded tape, reocrd under a non-input condition and take a reading of the noise level output of the erased signal and obtain a ratio between the two from the following formula:

$$Er = 20 \log \frac{E_0}{E_2 - E_1} \text{ (dB)}$$

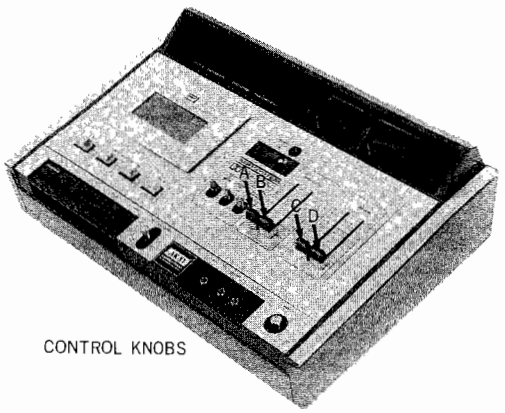
where,

Er = Desired erase ratio (dB)
E_0 = 1,000 Hz signal output level (V)
E_2 = Non-input signal recorded level (V)
E_1 = Virgin tape noise output level (V)

IV. DISMANTLING OF UNIT

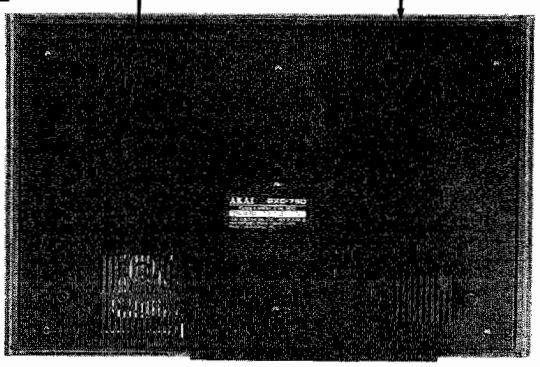
In case of trouble, etc. necessitating disassembly, please disassemble in the order shown in photographs. Reassemble in reverse order.

1

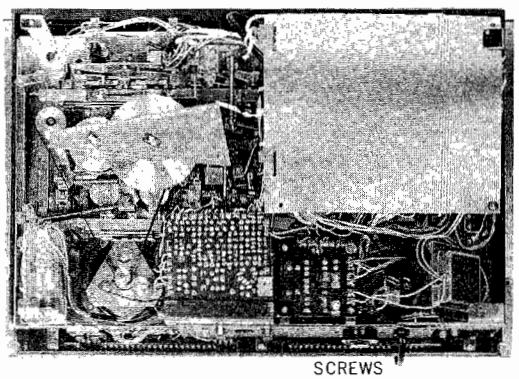


CONTROL KNOBS

2

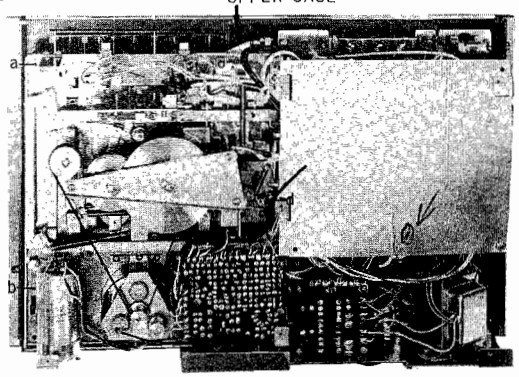


3



SCREWS

4



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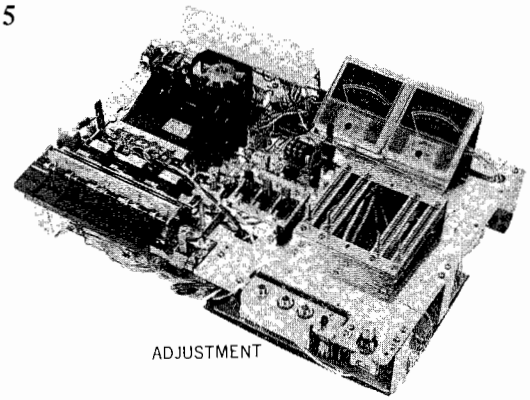


ADJUSTMENT

V. MECHANISM ADJUSTMENT

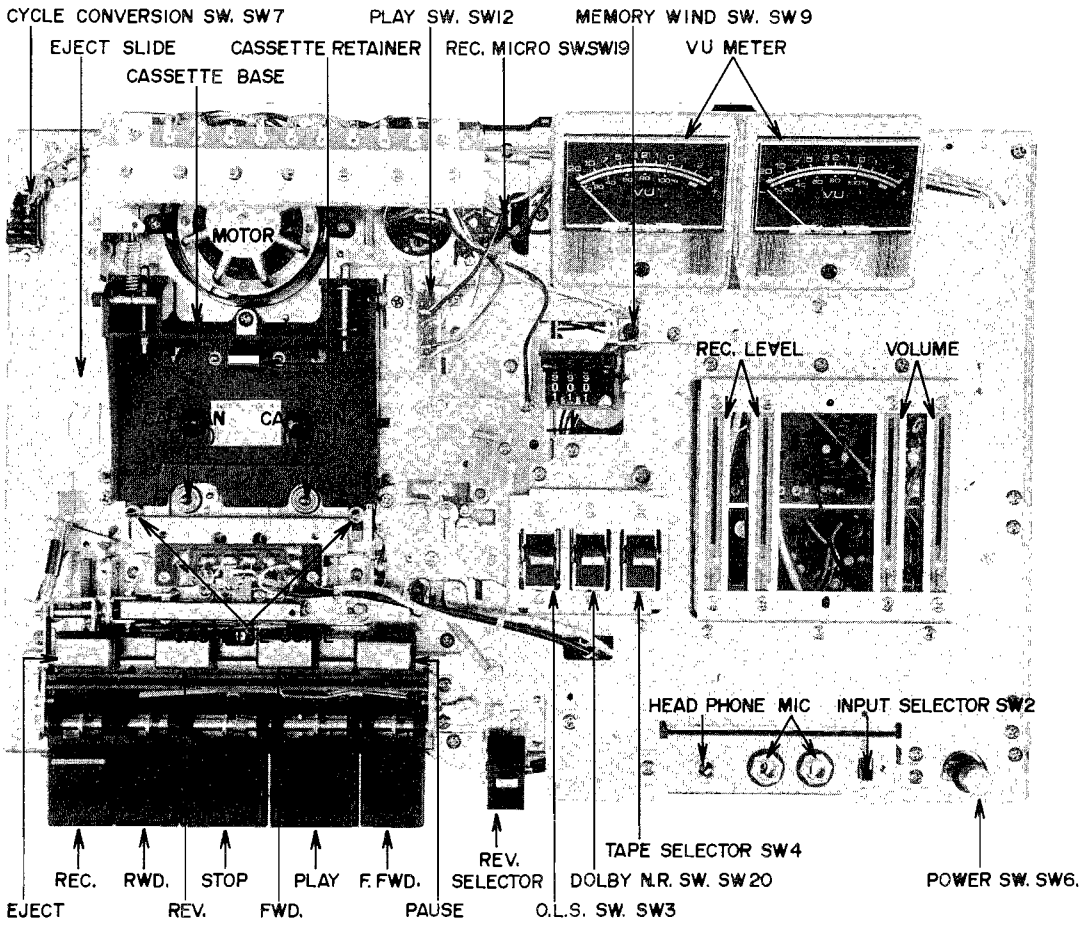


Fig. 9

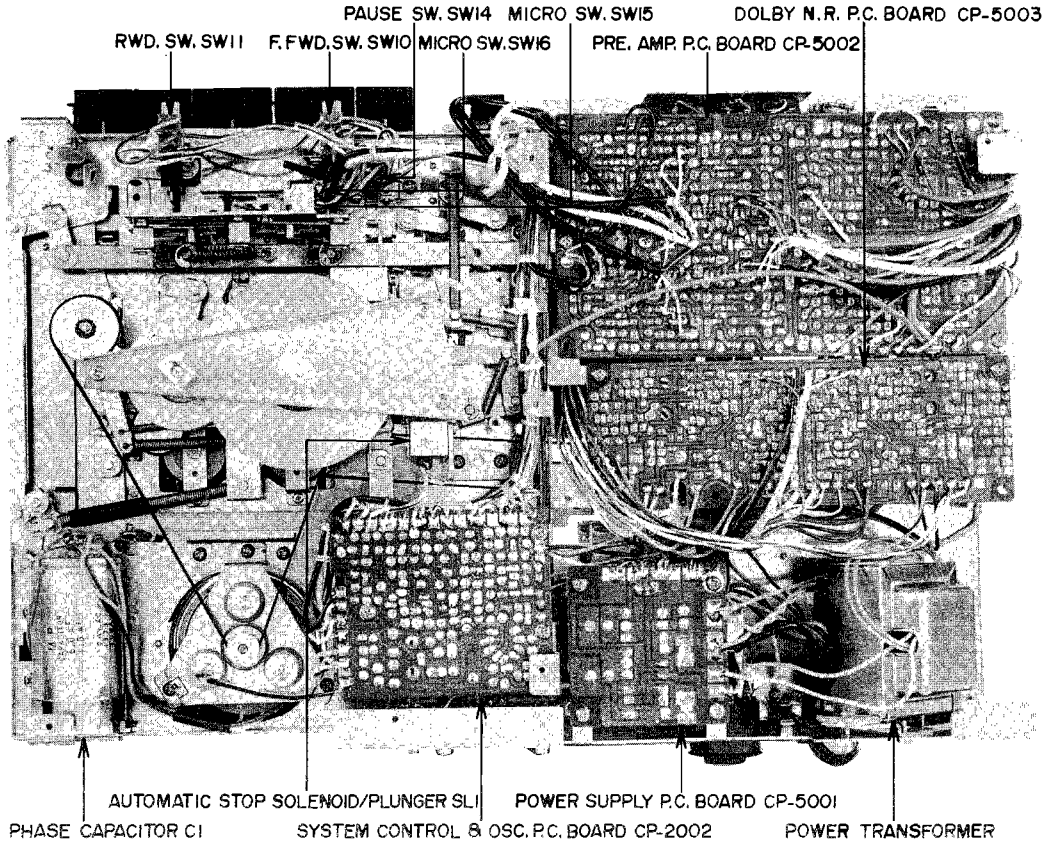


Fig. 10

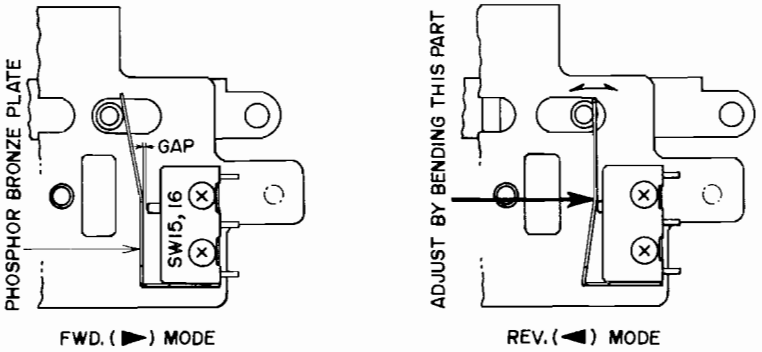


Fig. 11

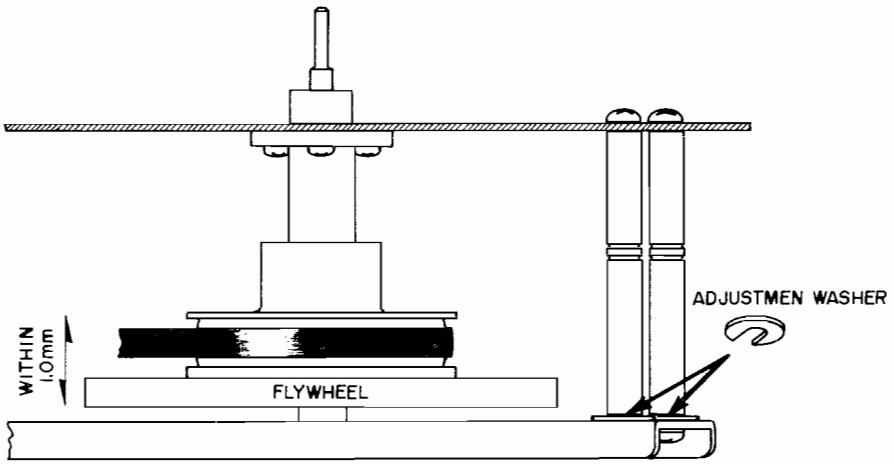


Fig. 12

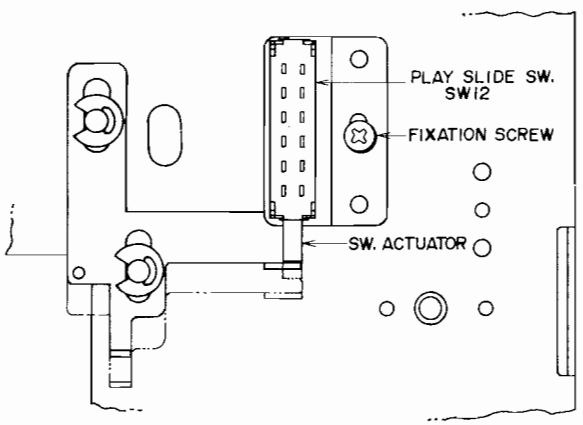


Fig. 13

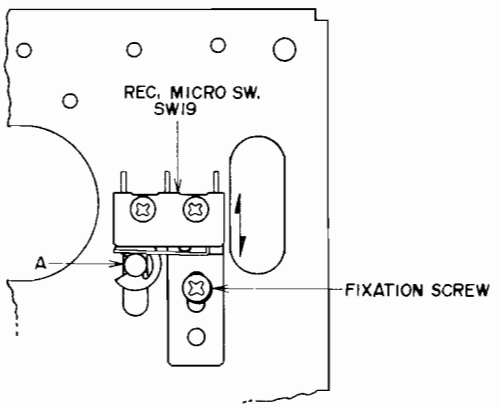


Fig. 14

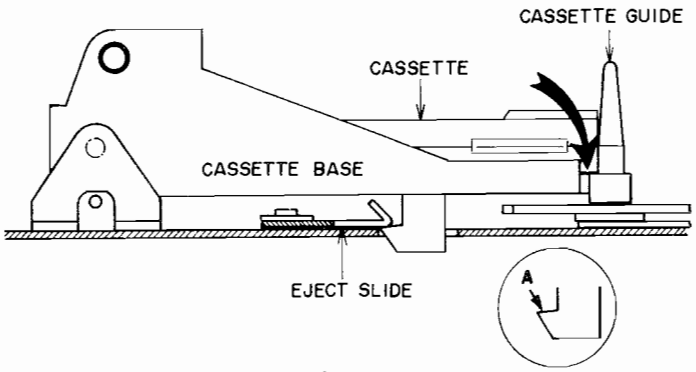


Fig. 15

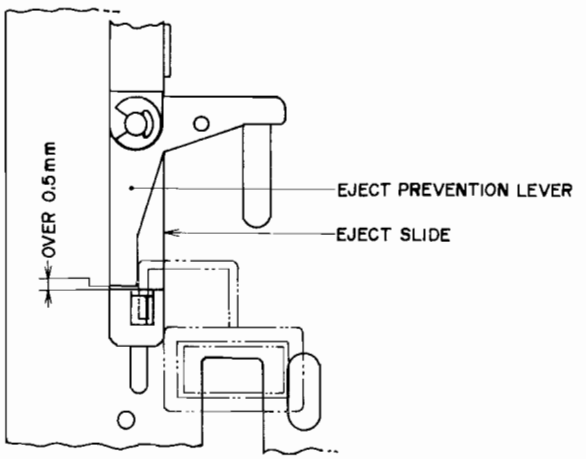


Fig. 16

1. ADJUSTMENT OF FWD ↔ REV CHANGE MICRO SWITCHES. (SW15, 16)

1) At FWD mode, (►) there should be a gap between the phosphor bronze plate, and the micro switch should be completely inactivated. (Fig. 11, left)
2) At REV mode, (◄) the phosphor bronze plate should depress the micro switch so that it operates perfectly. (Fig. 11, right)
3) In case the micro switch does not operate perfectly, adjust by bending the phosphor bronze plate as shown in Fig. 11 (right).

2. FLYWHEEL LOOSE PLAY ADJUSTMENT

Adjust flywheel loose play to within 1.0 mm by inserting adjustment washers in the places shown in Fig. 12.

3. POSITION ADJUSTMENT OF PLAY SLIDE SWITCH (SW12)

With the Play Button at depressed (unlocked) condition, loosen the fixation screw shown in Fig. 13, and move the play slide switch as indicated by the arrow mark in the figure. Fix screw at place at which the switch actuator fully enters switch. (indicated by solid line). When the Play Button is depressed and locked, the switch actuator should return by only the backlash portion (indicated by dotted line).

4. POSITION ADJUSTMENT OF RECORDING MICRO SWITCH (SW-19)

Loosen the fixation screw shown in Fig. 14 and move the recording micro-switch as indicated by the arrow mark in the figure. Adjust so that when the Recording Button is depressed to effect recording mode, recording micro-switch SW-19 is perfectly turned ON. Fix screw to maintain this condition.

* The part indicated by A in Fig. 14 must not touch the body of the micro-switch.

5. EJECT SLIDE ADJUSTMENT

Confirm that the cassette slides the cassette guide perfectly and that the cassette base is locked by the hook part of the eject slide when it is completely lowered.

* If it does not lock, remove uneven edges from eassette base A side surface. (Refer to Fig. 15)

When the Play Button is depressed and playback mode effected, confirm that as shown in Fig. 16, the gap between the eject prevention lever and eject slide is more than 0.5 mm.

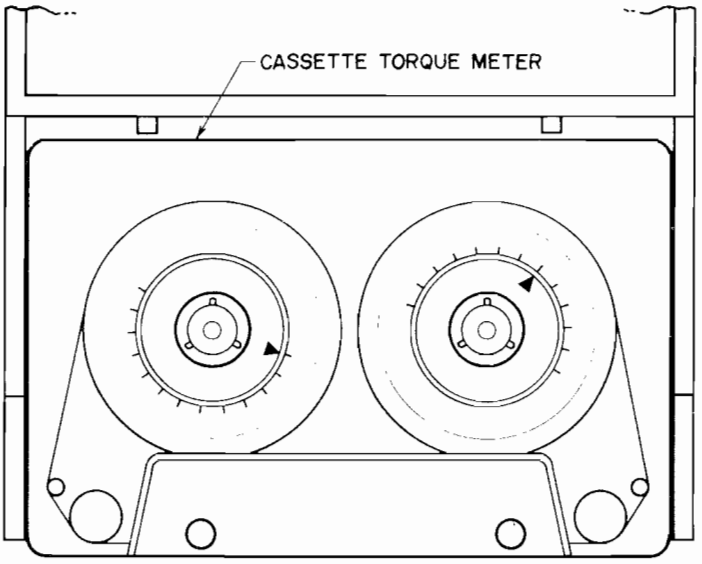


Fig. 17

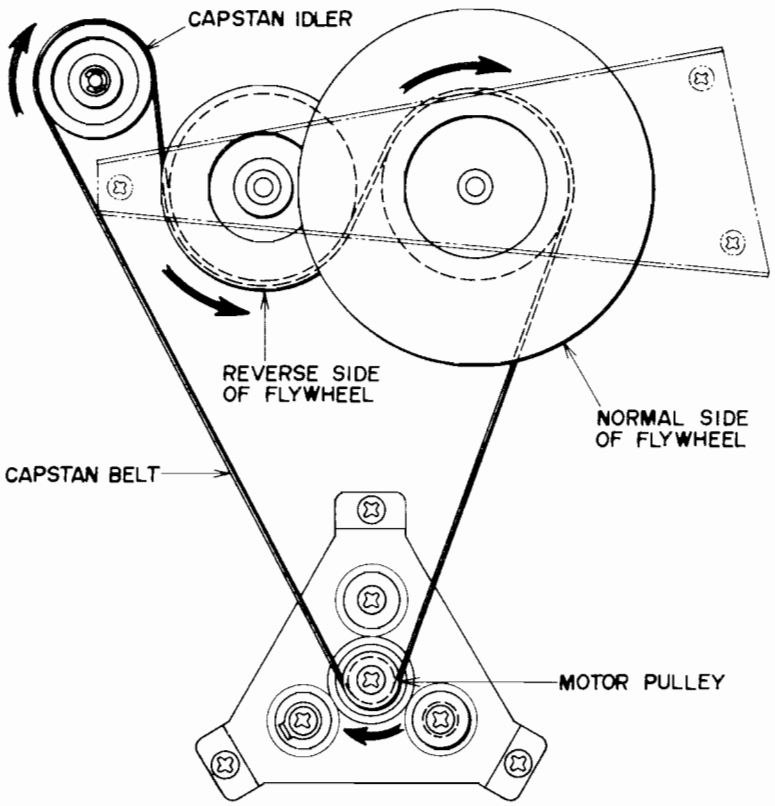


Fig. 18

6. REWIND TORQUE AND MEASURING METHOD AT VARIOUS MODES

As shown in Fig. 17, set a cassette torque meter to cassette base and read ▲ mark indication at each tape deck mode.

Specified Torque:

FWD and REV playback modes: 45 to 70 g-cm
F.FWD and REWIND modes: 60 g-cm
* over 60 g-cm OK. if clutch functions.

7. HOW TO INSTALL CAPSTAN BELT

NOTE: Motor revolutions are in one direction only. There are two different types of motor pulleys. One is for 50 Hz and the other for 60 Hz operation.

VI. HEAD ADJUSTMENT

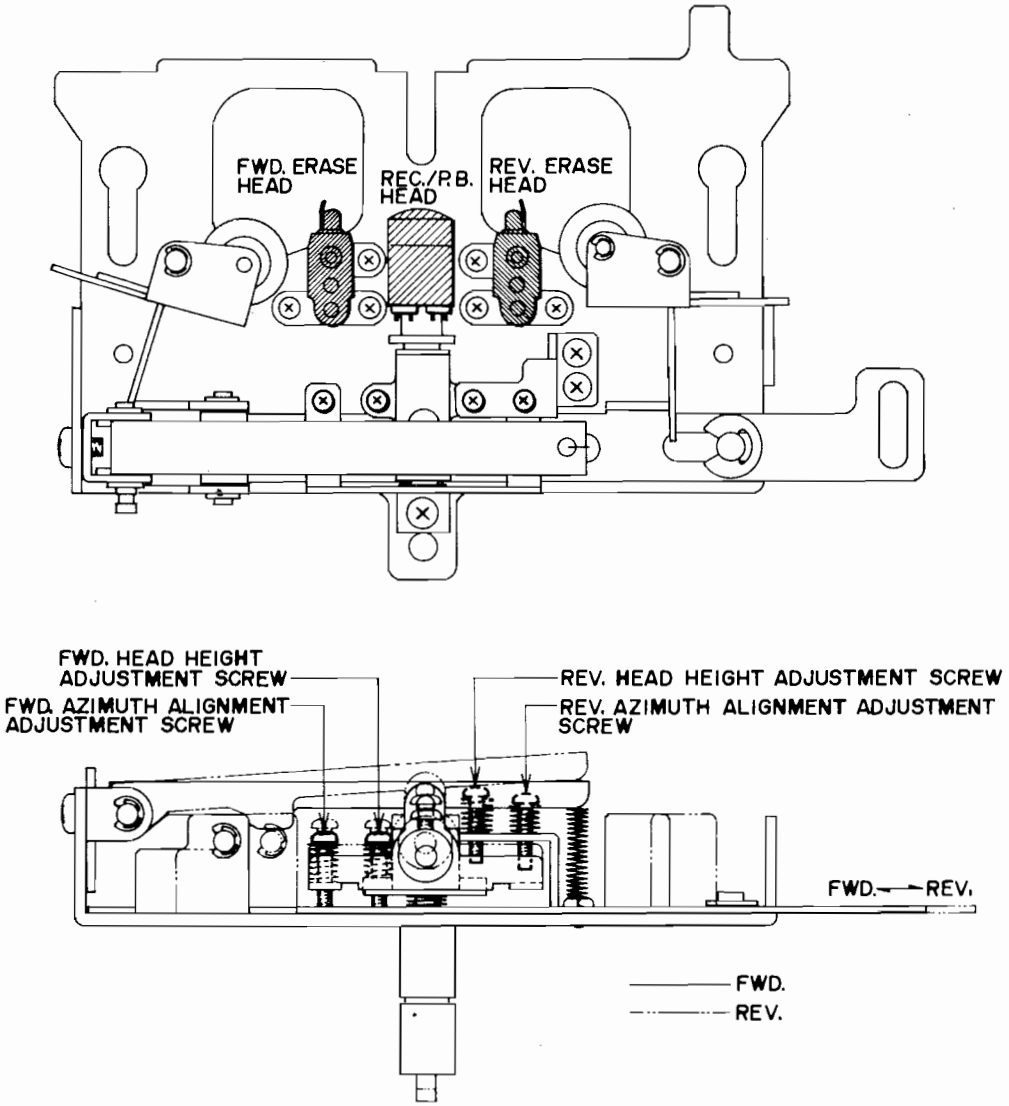


Fig. 19

1. Recording/Playback Head Height Adjustment.
   Playback a 4 track, 1 kHz 0VU recorded tape and adjust FWD and REV Head Height Adjustment Screws shown in Fig. 19 to obtain maximum output on both left and right channels.
   * Left/right channel deviation must be within -1 to -2 dB.
2. Recording/Playback Head Azimuth Alignment Adjustment
   Playback a 10 kHz recorded tape and adjust FWD and REV Azimuth Alignment Adjustment Screws shown in Fig. 19 to obtain maximum output on both left and right channels.
3. Repeat adjustments outlined items 1 and 2 above two or three times for optimum adjusted condition.
4. Erase head height can be adjusted by using washers, but as a general rule, this is not necessary.
5. Always demagnetize heads following head adjustments.

VII. AMPLIFIER SYSTEM ADJUSTMENT

1. PRE-AMP BLOCK DIAGRAM

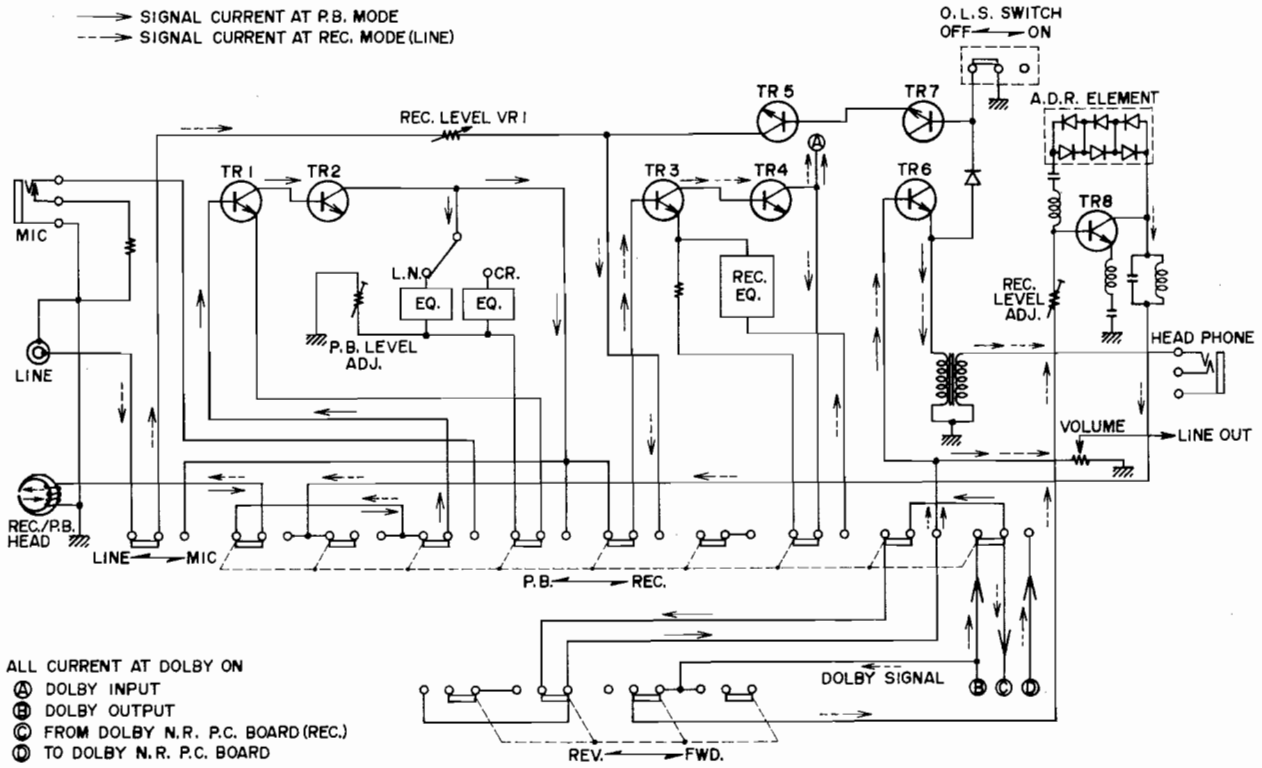


Fig. 20

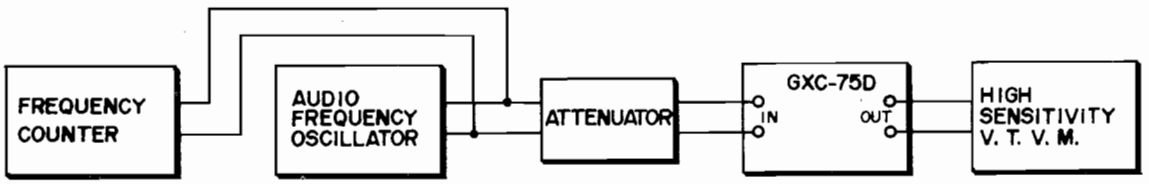


Fig. 21 Various Measuring Instrument Connections

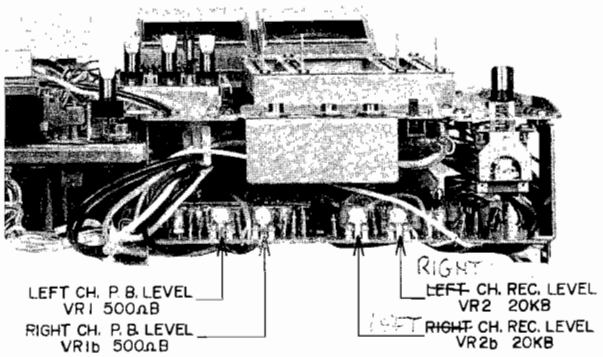


Fig. 22

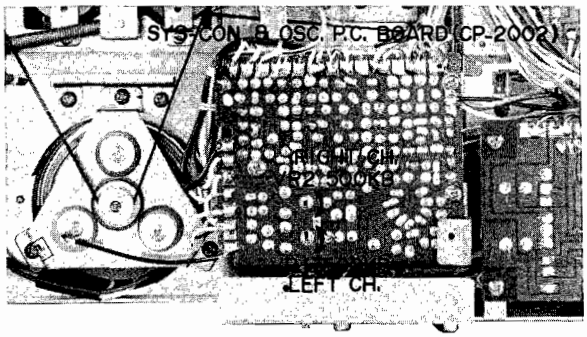


Fig. 23

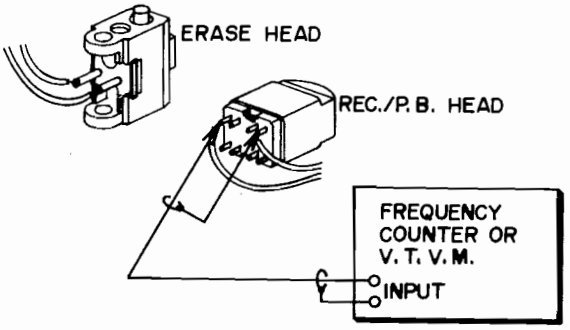


Fig. 24

2. PLAYBACK LEVEL ADJUSTMENT (Refer to Figs. 21 and 22)

(1) Connect a High Sensitivity V.T.V.M. to the line output of the GXC-75D.
(2) Set machine to forward playback mode.
(3) Set volume controls to maximum (10 position).
(4) Playback a 333 Hz "0" VU recorded test tape and adjust semi-fixed resistors VR1 500 ΩB (left channel) and VRlb 500 ΩB (right channel) of Pre-Amp. P.C. Board (CP-5002) to obtain a High Sensitivity V.T.V.M. indication of 0 dB (0.775V).
(5) Next, set machine to reverse playback mode and obtain balance between FWD and REV playback modes. The High Sensitivity V.T.V.M. indication at reverse playback mode must be within a ±2 dB range in relation to forward playback mode.

3. RECORDING LEVEL ADJUSTMENT (Refer to Figs. 21 and 22)

(1) Connect an Audio Frequency Oscillator to the line input and a High Sensitivity V.T.V.M. to the line output of the GXC-75D.
(2) Set Input Selector to LINE position.
(3) Set Tape Selector to LOW NOISE position and load a blank low noise cassette tape.
(4) Set Volume Controls (located on top panel) VR3 10 kA (left channel) and VR4 (right channel) as well as Recording Level Controls VR1 (left channel) and VR2 (right channel) to maximum (10 position).
(5) Set the GXC-75D to recording mode and supply a 1,000 Hz sine wave signal to the line input from the Audio Frequency Oscillator through an Attenuator.
(6) Adjust Attenuator to obtain a 0 dB (0.775V) High Sensitivity V.T.V.M. indication.
(7) Record under these conditions.
(8) Playback the tape and check the line output level. In case it is not "0" dB, adjust semi-fixed resistors VR2 20 kB (left channel) and VR2b 20 kB (right channel) of Pre-Amp. P.C. Board (CP-5002) to obtain a "0" dB line output level.
(9) Adjust so that when a 1,000 Hz signal recording is played back, the difference in the output level of a reverse recorded tape is within ±2 dB in relation to a forward recorded tape.

4. FREQUENCY RESPONSE ADJUSTMENT (Refer to Fig. 23)

(1) (Refer to FREQUENCY RESPONSE under MEASURING METHOD, section III) Record 1 kHz and 10 kHz sine waves signal at -20 dB. Playback the tape and adjust semi-fixed resistors VR1 500 kB (left channel) and VR2 500 kB (right channel) of Syscon & OSC. P.C. Board (CP-2002) so that the output level of these two frequencies are equal.
(2) Re-confirm recording level following frequency response adjustment.

5. RECORDING BIAS FREQUENCY CHECK (Refer to Fig. 24)

(1) Set the GXC-75D to recording mode.
(2) As shown in Fig. 24, connect a Frequency Counter to the coil terminals of the recording/playback head and read indication.
(3) There is no way to adjust the recording bias frequency, but the correct frequency is 61±3 kHz.

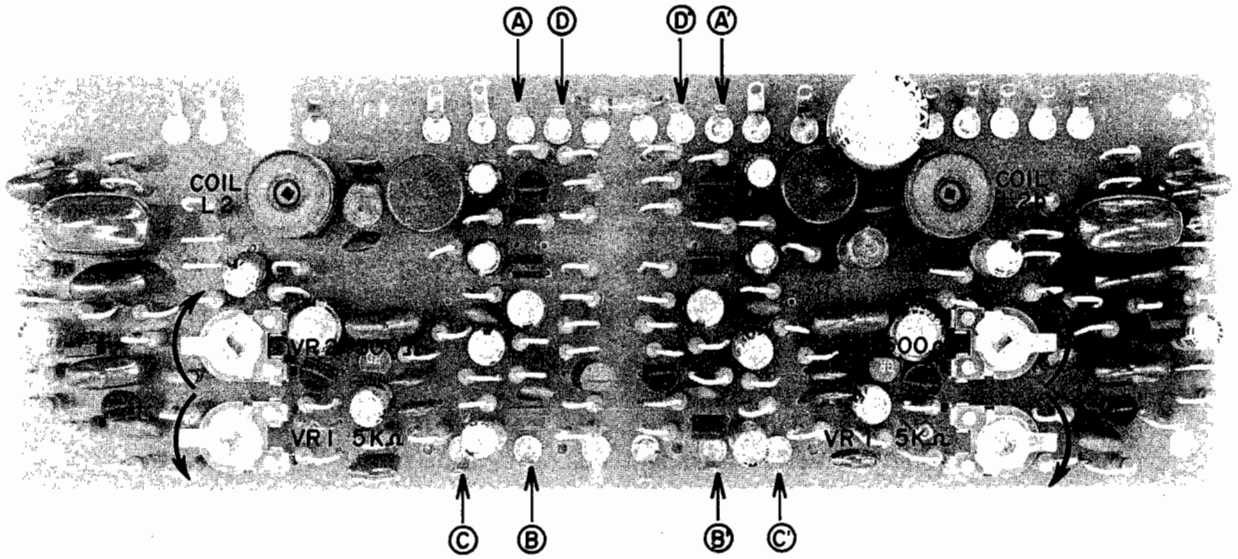


Fig. 25 Dolby N.R. P.C. Board CP-5003 (Face Side)

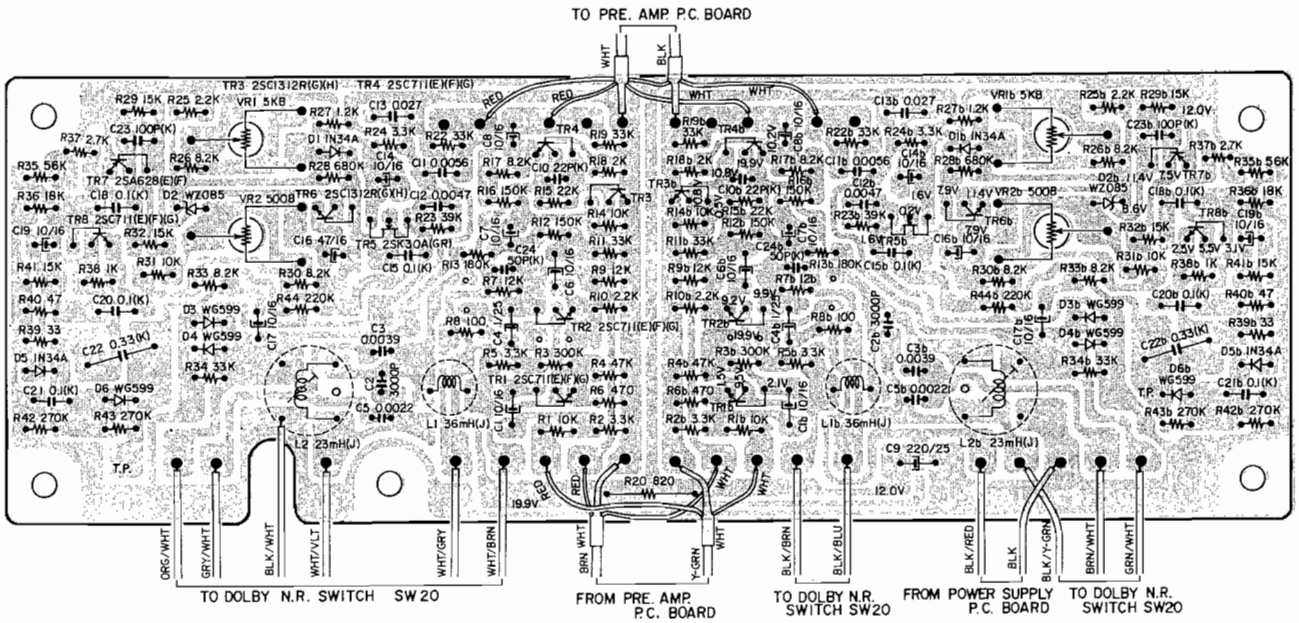


Fig. 26 Dolby N.R. P.C. Board CP-5003 (Reverse Side)

6. RECORDING BIAS VOLTAGE AND ERASE VOLTAGE CHECK (Refer to Fig. 24)

(1) Set the GXC-75D to recording mode.
(2) Connect a V.T.V.M. between the coil terminals of the recording/playback head as shown in Fig. 24 and read indication. Recording bias voltage should be about 3V A.C. with low noise tape and about 4V A.C. with chromium dioxide tape.
(3) Connect a V.T.V.M. between the coil terminals of the erase head and read indication. Erase voltage should be 27V A.C. with low noise tape and 35V A.C. with chromium dioxide tape.

7. DOLBY N.R. SYSTEM CIRCUIT ADJUSTMENT (Refer to Figs. 25 and 26)

(1) 19 kHz FILTER ADJUSTMENT (Refer to Figs. 21 and 25)

a) Connect the various measuring instruments as shown in Fig. 21.
b) To prevent damage by the FM stereo pilot signal (19 kHz) use a Frequency Counter and set the oscillation frequency of the Audio Frequency Oscillator to exactly 19 kHz and supply this signal to the line input.
c) Set Recording Level Controls VR1 50 kA (left channel) and VR2 50 kA(right channel) as well as Volume Controls VR3 10 kA(left channel) and VR4 10 kA(Right channel) to maximum (10 position).
d) Set machine to recording mode and adjust 19 kHz filter coils L2 (left channel) and L2b (right channel) of Dolby N.R. P.C. Board (CP-5003) to obtain the lowest possible output level.

(2) RECORDING CIRCUIT ADJUSTMENT (Refer to Figs. 21 and 25)

a) Connect the various measuring instruments as shown in Fig. 21.
b) Turn Dolby N.R. P.C. Board (CP-5003) gain adjustment semi-fixed resistors VR2 500B (left channel) and VR2b 500B (right channel) as well as FET gate bias adjustment semi-fixed resistors VR1 5 kB (left channel) and VR1b 5 kB (right channel) as far as they will go in the direction of the arrows shown in Fig. 25.
c) Turn Dolby N.R. Switch SW20 to OFF position and, as shown in Fig. 24, ground "TP" test point (FET Gate).
d) Next, set Recording Level Controls VR1 50 kA (left channel) and VR2 to kA (right channel) as well as output adjustment Volume Controls VR3 10 kA (left channel) and VR4 10 kA (right channel) to maximum (10 position).
e) Set the GXC-75D to recording mode and supply a 5 kHz signal which has been checked with a frequency counter to the line input from the audio Frequency Oscillator and adjust the Attenuator to obtain a +2 dB line output level indication.
f) At this time, adjust the Attenuator to obtain a +2 dB line output level indication.
g) At this condition, further adjust the Attenuator so that the line output level at point Ⓓ in Fig. 25 is -28.5 dB. (This adjustment must be exactly -28.5 dB) and confirm that the level at point Ⓑ is -28.5±0.5 dB.
h) Next, turn Dolby N.R. Switch SW20 to ON position. Adjust Dolby N.R. P.C. Board gain adjustment semi-fixed resistors VR2 500B (left channel) and VR2b 500B (right channel) until the voltage at point Ⓑ in Fig. 25 is increased by 10 dB.
i) Disconnect GND (ground) from FET gate. Adjust FET gate bias volumes VR1 5 kB (left channel) and VR1b 5 kB (right channel) until the voltage at point Ⓑ is reduced by 2 dB.

VIII. EXPLANATION OF MECHANICAL FUNCTIONS

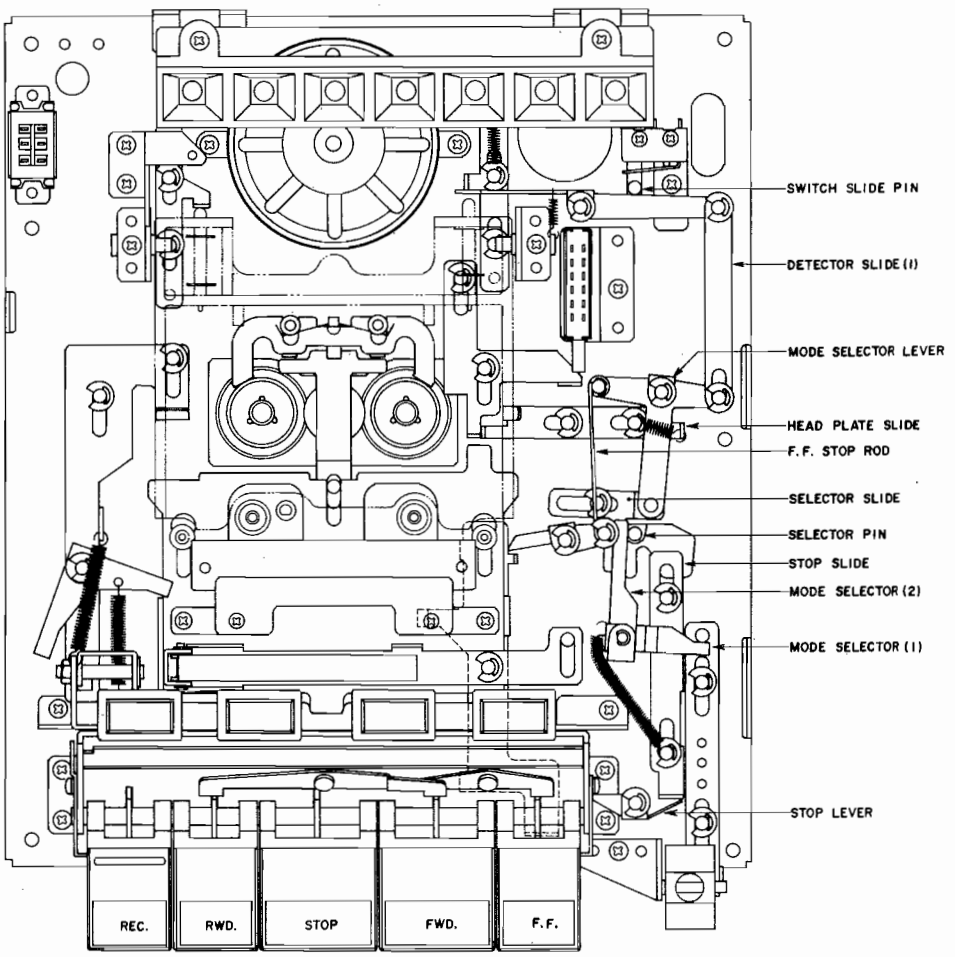


Fig. 27 Fase Side

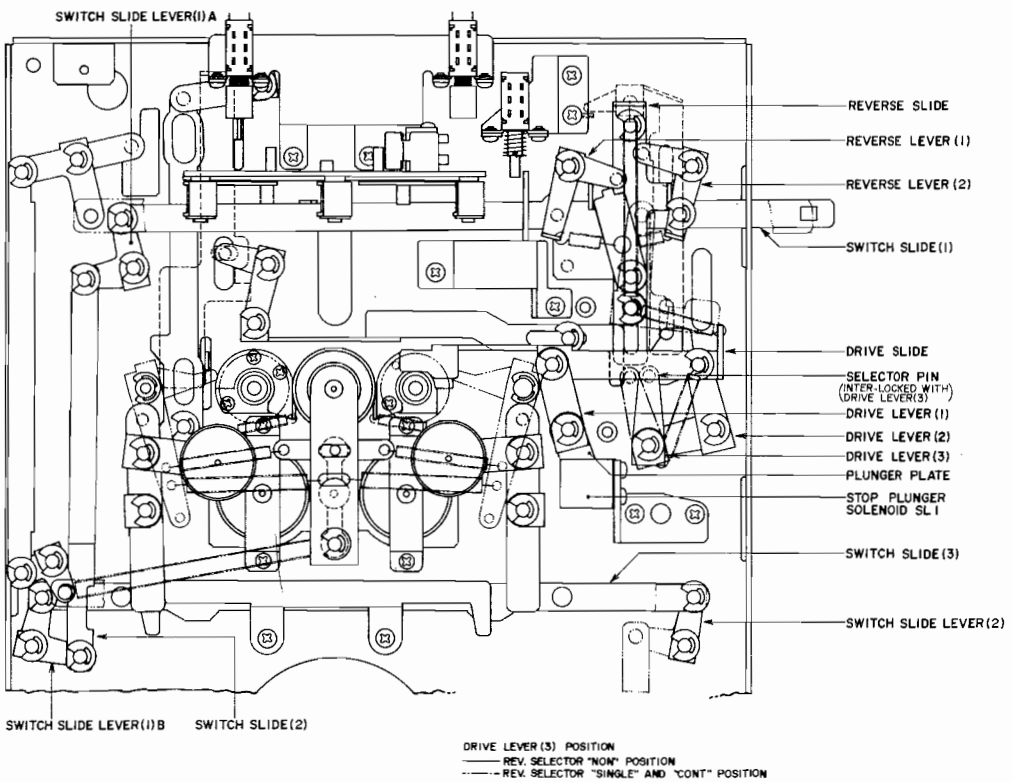


Fig. 28 Reverse Side

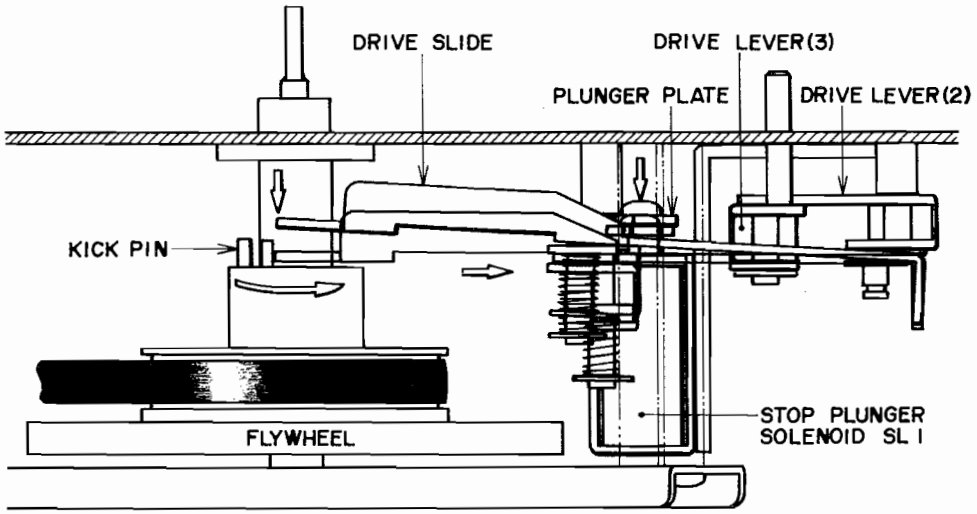


Fig. 29

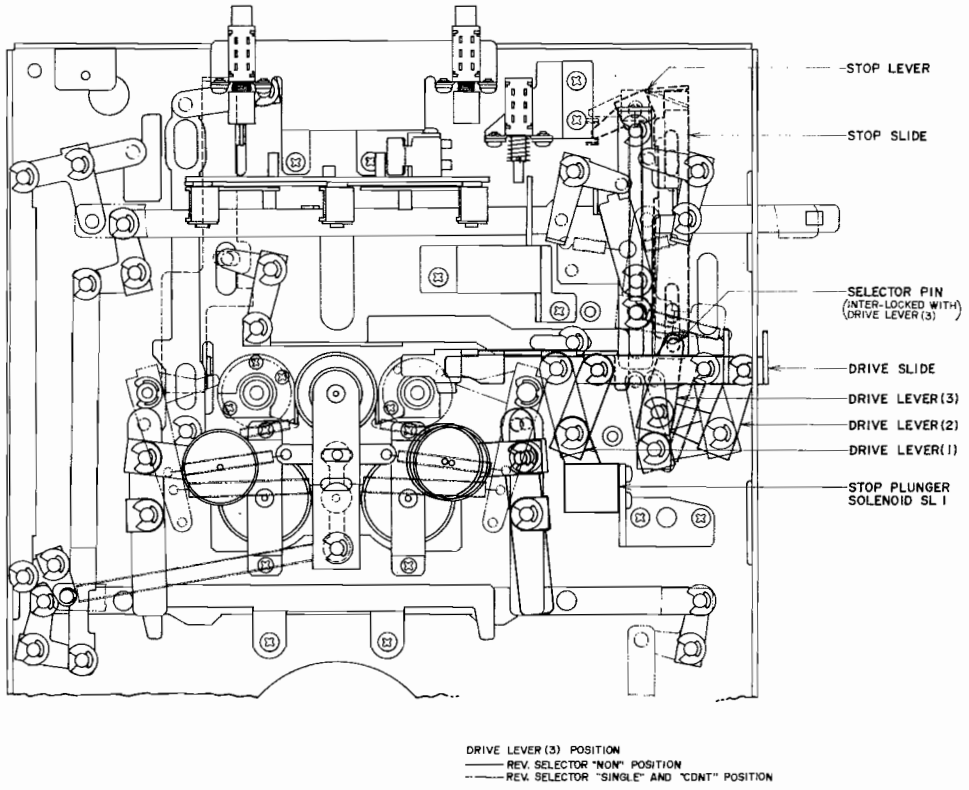


Fig. 30 Reverse Selector : NON → From FWD to STOP Mode

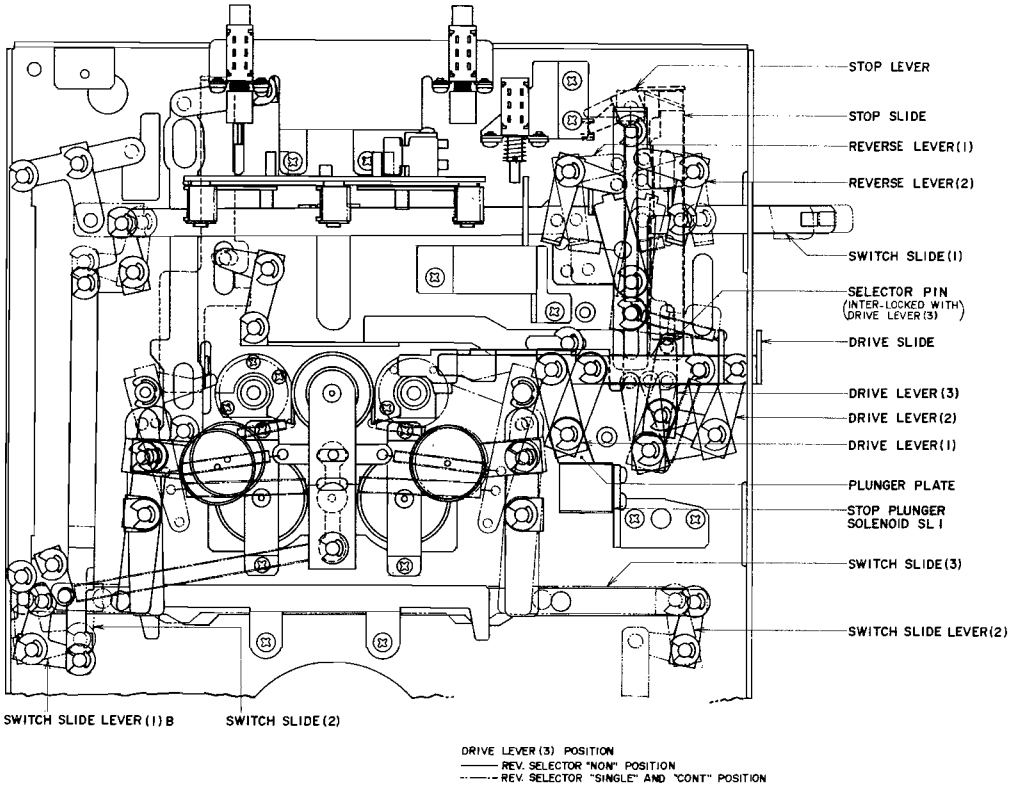


Fig. 31 Reverse Selector : NON → From REV to STOP Operation

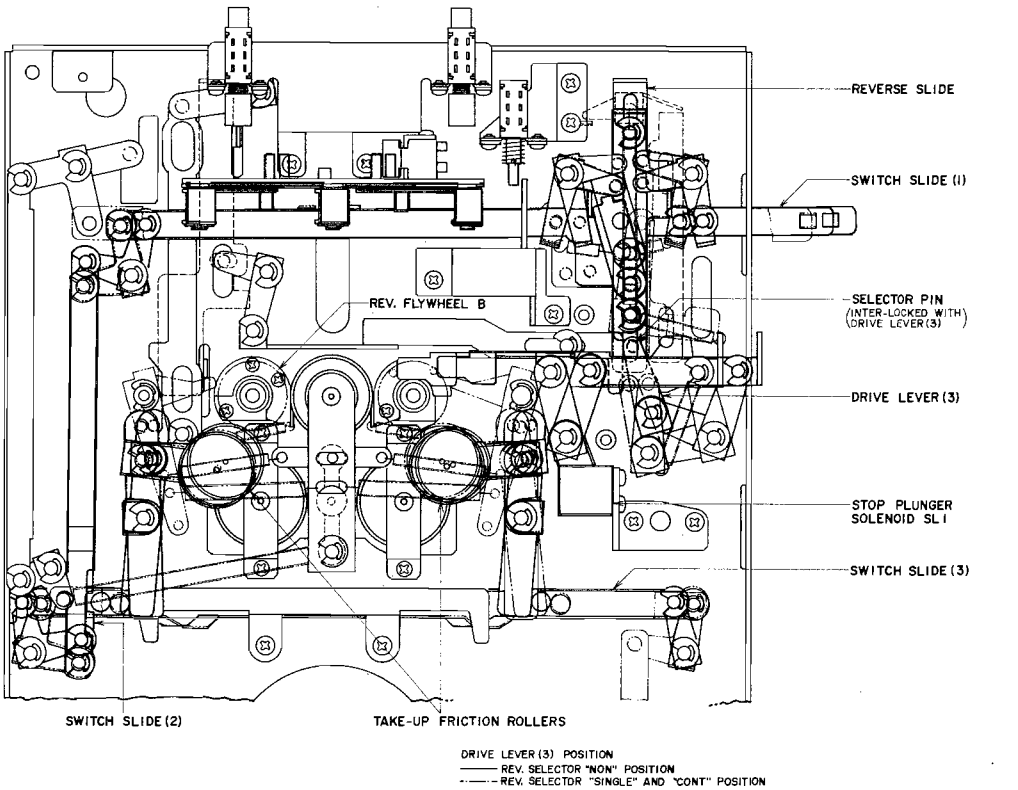


Fig. 32 Reverse Selector : SINGLE ⮌ From FWD to REV Operation

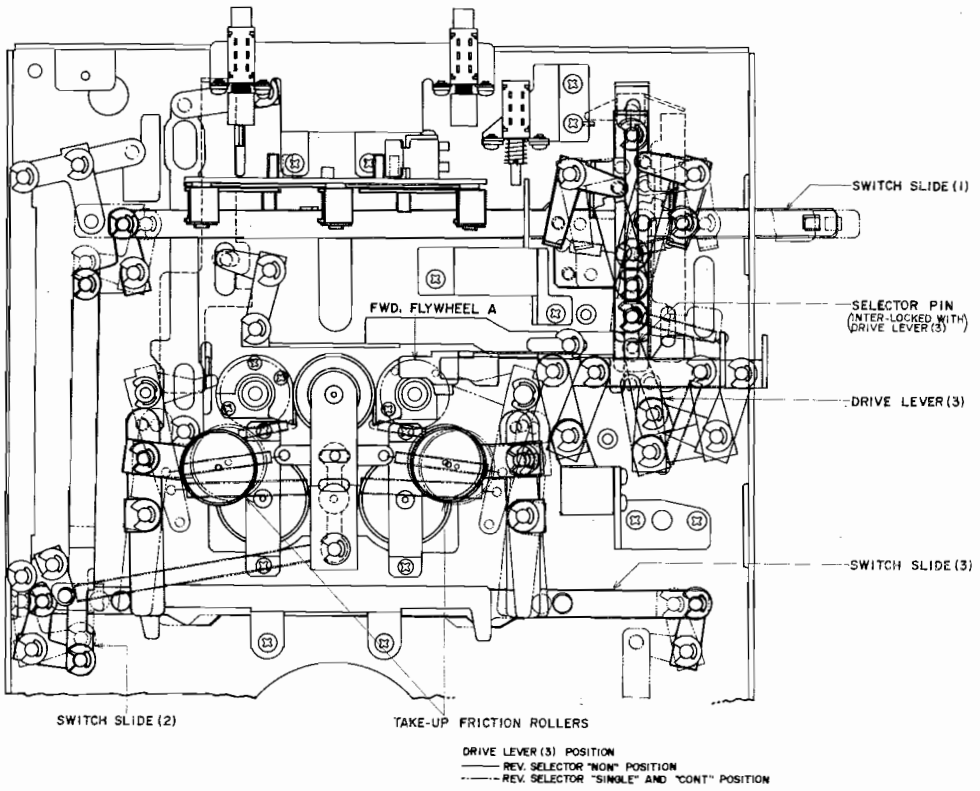


Fig. 33 Reverse Selector : CONT ⟲ From REV to FWD Operation

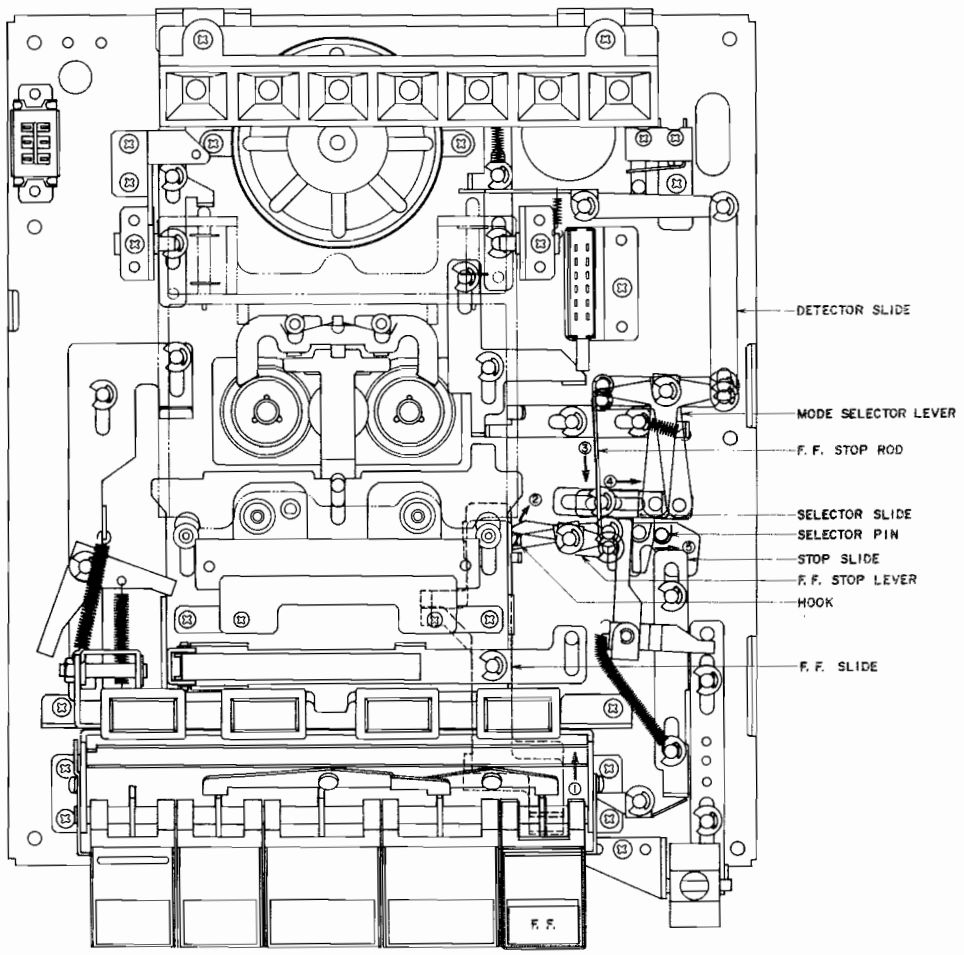


Fig. 34 From STOP to F.FWD Mode

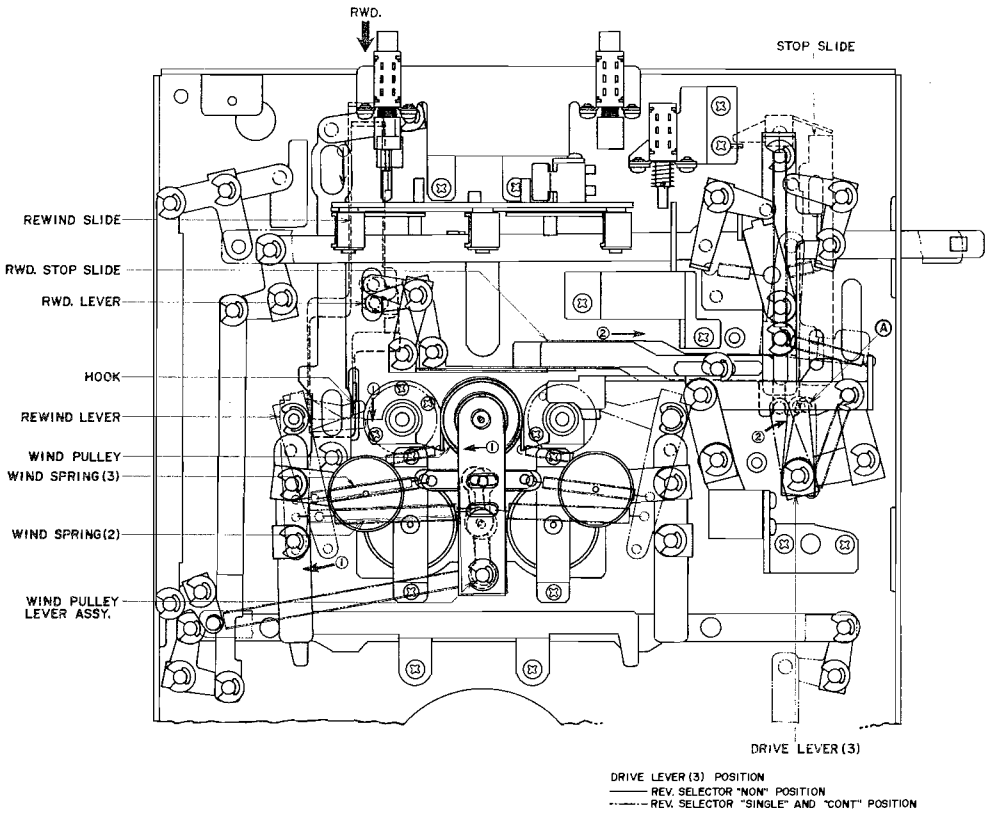


Fig. 35 From STOP to RWD Mode

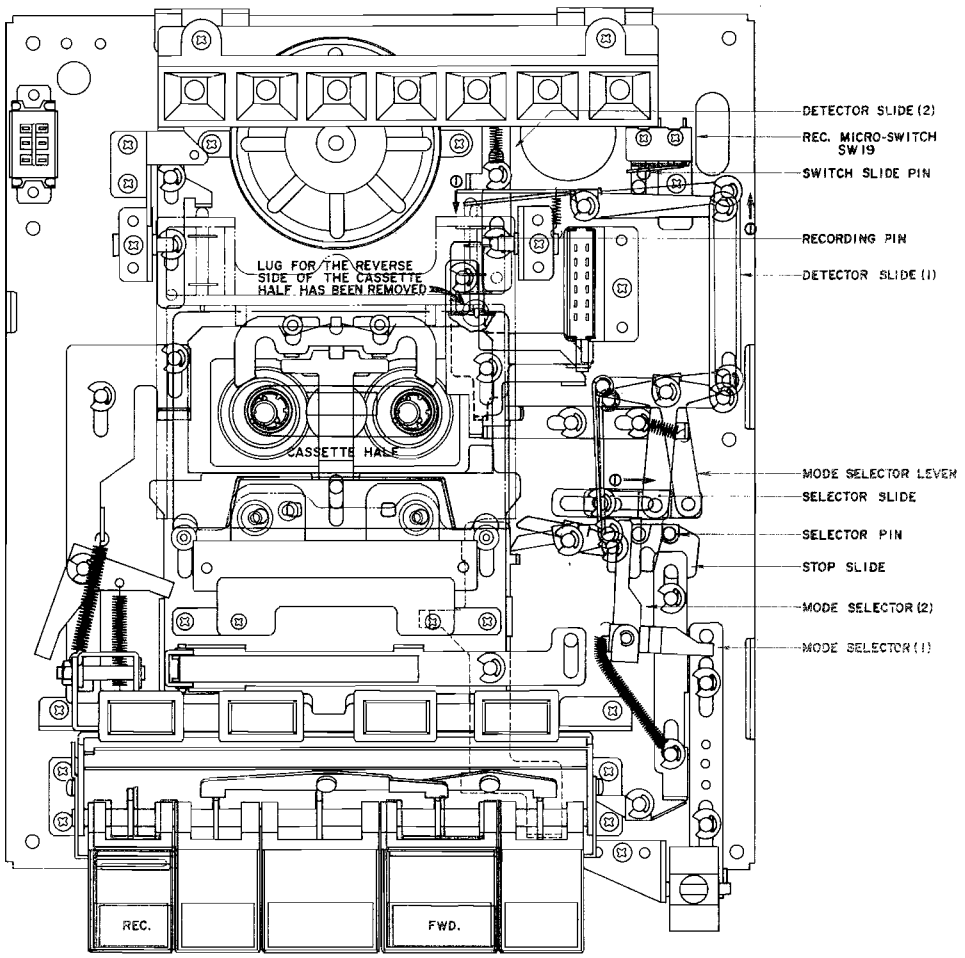


Fig. 36 Key Release From FWD REC Mode

1. KICK MECHANISM

1) Keyboard Block release from FWD playback mode (Refer to Figs. 29, 30)
(REV. SELECTOR at NON →)
a) When FWD playback ends and the tape stops, the system control circuit (Refer to SYSTEM CONTROL CIRCUIT OPERATION, Section IX) is activated and Stop Plunger Solenoid SL1 operates.
b) When Stop Plunger Solenoid SL1 operates, drive lever (1) which is interlocked with the stop plunger solenoid and the drive slide are momentarily pulled downward. (Refer to BASIC FUNCTION OF KICK MECHANISM, Fig. 29)
At this time, the flywheel kick pin kicks the pulled down drive slide and the drive slide moves in left direction.
c) When this happens, drive levers (2) and (3) which are interlocked with the drive slide works as shown in Fig. 30, the drive lever (3) selector pin kicks the stop slide, and the kicked stop slide depresses the stop lever, causing the Keyboard Block to release and the machine to enter STOP mode from FWD mode.

NOTE: At recording mode, keyboard Block release function works in the same way as described above.

2) Keyboard Block release from REV playback mode (Refer to Figs. 31 and 37)
(REV. SELECTOR at NON→)
a) When REV playback ends and the tape stops, the system control circuit (Refer to SYSTEM CONTROL CIRCUIT OPERATION, Section IX) is activated and Stop Plunger Solenoid SL1 operates.
b) At this time, as shown in Fig. 31 drive lever (3) must move further to the right than in the case of FWD playback. (This is because as shown by the reverse side, Fig. 31, the head plate slide and mode slector operation by menas of the switch is the result of this movement to the right). This operation is for the purpose of not allowing drive lever (3) selector pin to depress the reverse slide.
c) When Stop Plunger Solenoid SL1 operates, drive lever (1) interlocked with the plunger plate and the drive slide, are momentarily pulled downward. (Refer to Fig. 29) At this time, the flywheel kick pin kicks the pulled down drive slide and drive slide moves in right direction.
d) When this happens, drive levers (2) and (3) which are interlocked with the drive slide work as shown in Fig. 31 and drive lever (3) selector pin kicks the stop slide and the kicked stop slide depresses the stop lever, causing the Keyboard Block to release and the machine to release and the machine to enter STOP mode from REV mode.

3) Keyboard Block release from FWD →REV mode. (Refer to Fig. 32)
(REV. SELECTOR at SINGLE ⮌)
a) When FWD recording or playback ends and the tape stops, because the REV Selector is set to SINGLE ⮌ and drive lever (3) is right above the reverse slide as shown in Fig. 32, drive lever (3) selector pin depresses the reverse slide by means of the basic function of the kick mechanism (Refer to Fig. 29).
b) The reverse slide operates switch slides (1), (2), and (3), the switch operates the head plate slide, and the head is raised, (Refer to Fig. 38) thus effecting REV mode.
c) When set to REV recording or playback mode, drive lever (3) selector pin is brought to and stabilized directly above the stop slide by means of the Mode Selector (Refer to Fig. 31).
d) When REV tape travel ends, drive lever (3) selector pin depresses the stop slide and the Keyboard Block is released.
e) At this time, the right hand take up friction roller separates from the FWD flywheel, the left hand take up friction roller contacts the REV flywheel shaft, and revolutions begin in REV direction.

4) REV →FWD→ REV (Refer to Fig. 33)
(REV SELECTOR at CONT ⮎⮌)
* For mechanism change from FWD to REV, refer to Item 3) and Fig. 32.
a) When REV mode was effected from FWD mode as shown in Fig. 33, drive lever (3) selector pin moved to directly above the reverse slide. At the end of REV mode, when continuous kick operation begins the selector pin depresses the reverse slide and switch slides and switch slides (1), (2), and (3) change to FWD position.
* Movement of slide switches (1), (2), and (3) is indicated by the – – –line in Fig. 33.
b) Switch slides (1), (2) and (3) operate the head plate slide and the head is lowered, thus effecting FWD mode.
c) At this time, the left hand take up friction roller sepearates from the REV flywheel, the right hand take up friction roller contacts the FWD flywheel shaft and revolutions begin in FWD direction.

NOTE: For Reverse Selector operation in Item 1) through 4), refer to Fig. 37 and for head raising and lowering mechanism function, refer to Fig. 38.

5) Explanation of F.FWD and RWD automatic stop mechanism function

i) FAST FORWARD → STOP
(Refer to Fig. 34)

a) When the Keyboard Block F.FWD Button is depressed, the Fast Forward slide is pushed out as shown by arrow mark (1) in the figure.

b) The Fast Forward stop lever is pushed out by the Fast Forward slide hook.

c) The Fast Forward stop rod which is interlocked with the Fast Forward stop lever pulls the Mode Selector lever (Refer to arrow mark (3) in Fig. 34).

d) The Mode Selector lever pulls the selector slide and the selector pin moves to the position shown at ② in Fig. 34.

e) At the end of F.FWD when tape travel stops, the System Control Circuit and kick mechanism operates, the selector pin depresses the stop slide, and the Keyboard Block is released.

ii) REWIND → STOP (Refer to Fig. 35)

a) When the Keyboard Block RWD. Button is depressed to rewind the tape, the rewind slide is thrust forward as shown by arrow mark ① in the figure and at the same time the rewind slide hook depresses the rewind lever.
Also at the same time, the wind spring causes the wind pulley to contact the REV flywheel.

b) At this time, the Rewind lever pushes the Rewind stop slide to the left as shown by arrow mark ② in Fig. 35 and drive lever (3) selector pin is stabilized at position Ⓐ.

NOTE: In the operation described in b), the selector pin will come to above the stop slide regardless of whether the Reverse Selector is set to NON, SINGLE, or CONT position.

c) For this reason, at the end of rewind, the system control circuit operates, and following kick mechanism change, the selector pin depresses the stop slide, and in turn the stop slide depresses the slide lever and the Keyboard Block is released.

6) Detector Mechanism for prevention of re-recording (Refer to Fig. 36).
(REV SELECTOR at SIGLE ⮌)

a) At the end of FWD recording, when changing to REV recording direction, if the break out lug for the reverse side (right side) has been removed from the cassette pack being used, operation is as follows:

b) Because at FWD recording mode, the recording pin enters the cassette pack and the detector lever pulls the Mode Selector as shown by arrow mark ① in Fig. 34, the selector slide pushes the selector pin to above the stop slide.

c) At the end of FWD direction recording, the system control circuit is activated and stop plunger solenoid SL1 operates. Also the kick mechanism functions and the selector pin depresses the stop slide. Thus the stop lever is depressed and the Keyboard Block releases.

NOTE: When the Recording Button is depressed while the Reverse Selector is at CONT ⮌⮎, the Reverse Selector will automatically return to SINGLE ⮌ position.

2. REVERSE SELECTOR OPERATING MECHANISM

The Reverse Selector Mechanism operates by means of drive lever (3) depressing the reverse slide.

1. At NON REVERSE the selector pin assumes the right hand position indicated in the figure and the syscon operates. Even when the solenoid plunger causes the drive lever to operate, it does not depress the reverse slide, but depresses the stop slide. Consequently, the stop slide depresses the keyboard release lever and the deck enters stop mode.
2. At SINGLE REVERSE, the selector pin assumes the center position indicated in the figure and the syscon operates and when the solenoid plunger causes the drive lever to operate, the reverse slide functions. Consequently, the reverse lever operates and the machine enters reverse mode. However, at the same time that the machine enters reverse mode, the selector pin moves to the left so that at the end of reverse playback, the selector pin depresses the stop plate and the machine enters STOP mode in the same way as at NON-REVERSE.
3. At CONT REVERSE, the Mode Selector moves to the far left and the selector pin assumes the left hand position indicated in the figure. Consequently, each time the syscon operates, the drive lever depresses the reverse slide, and every time the tape stops, reverse is repeated for continuous playback.

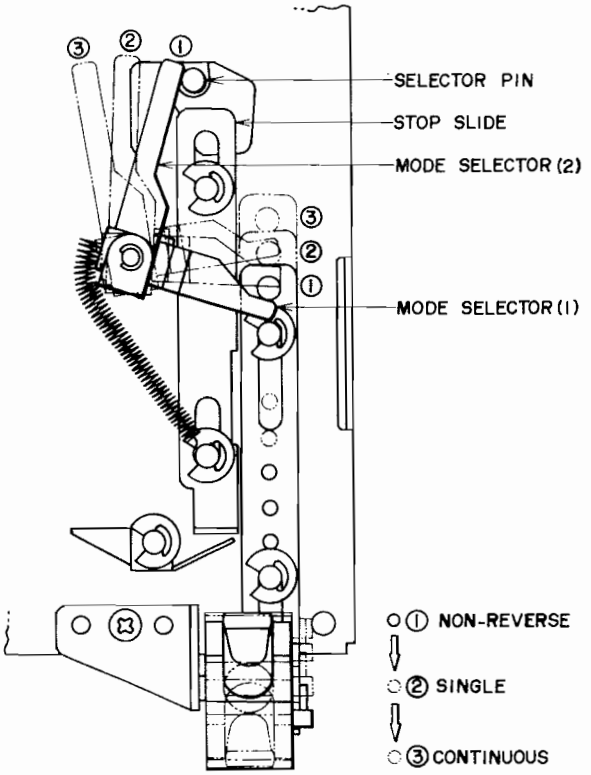


Fig. 37

3. RECORDING/PLAYBACK HEAD RAISING AND LOWERING MECHANISM FUNCTION

Upward pressure is applied to the head plate by the spring. At FWD mode, this is suppressed by the convex part of the lever and the roller which is installed on the head plate slide separates from the lever.
When switched from FWD to REV mode, the head plate slide moves to the right, the roller contacts the lever and lifts it upward, and the head plate is raised by means of spring pressure. Thus the recording/playback head shifts upward and track position is changed.

NOTE: At forward mode, the convex part contacts the head plate and the roller does not contact the lever.
At reverse mode, the convex part separates from the head plate and the roller contacts the lever.

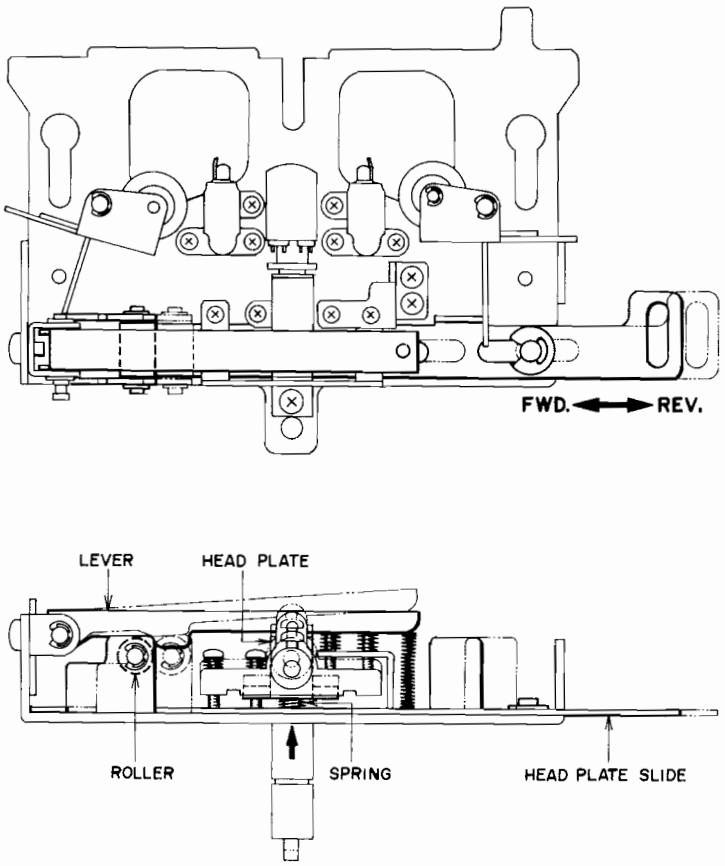


Fig. 38

IX. SYSTEM CONTROL CIRCUIT OPERATION

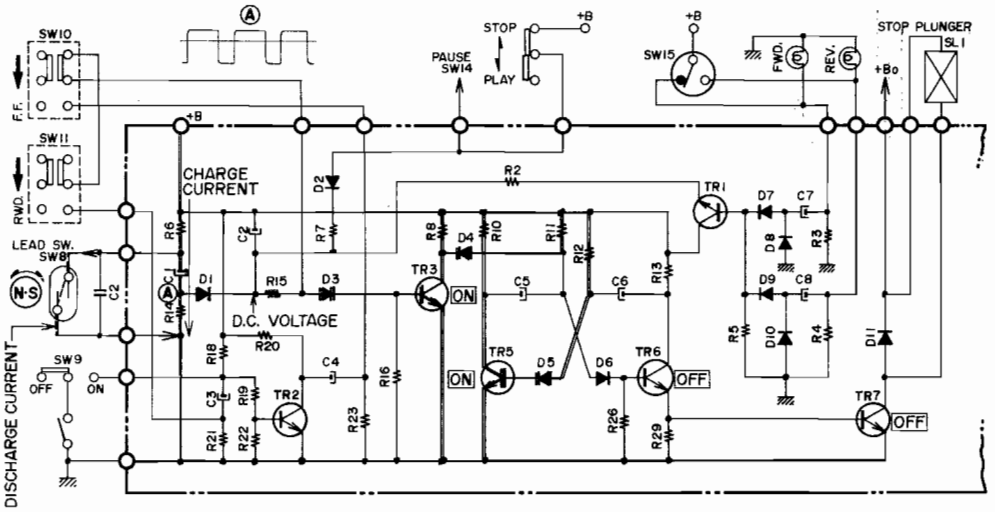


Fig. 39

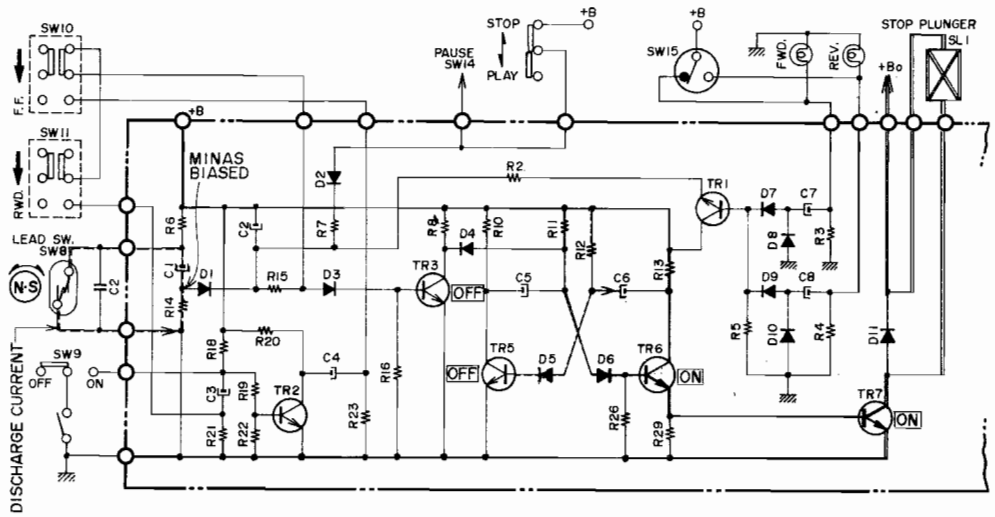


Fig. 40

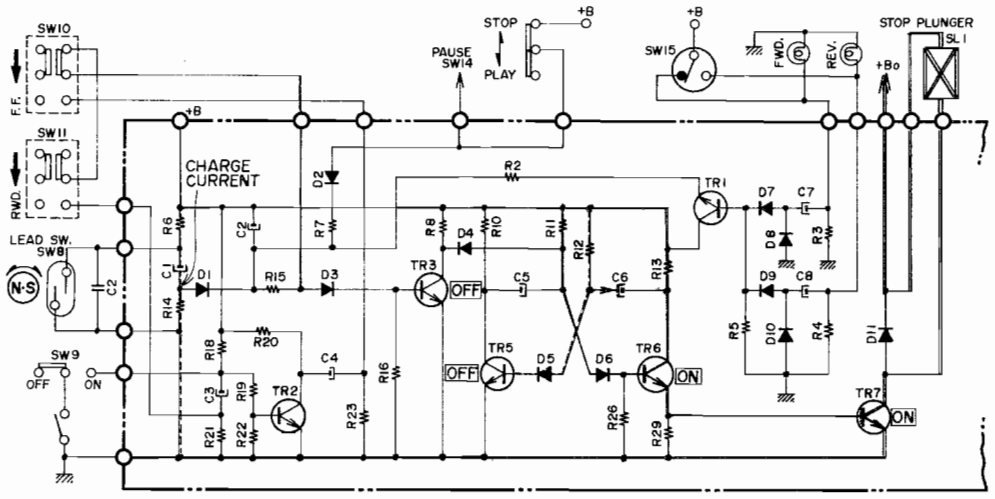


Fig. 41

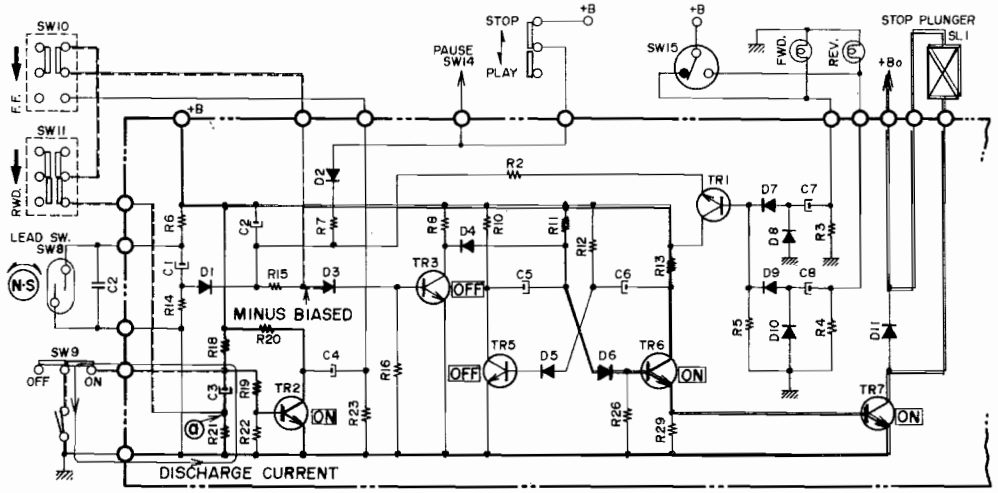


Fig. 42

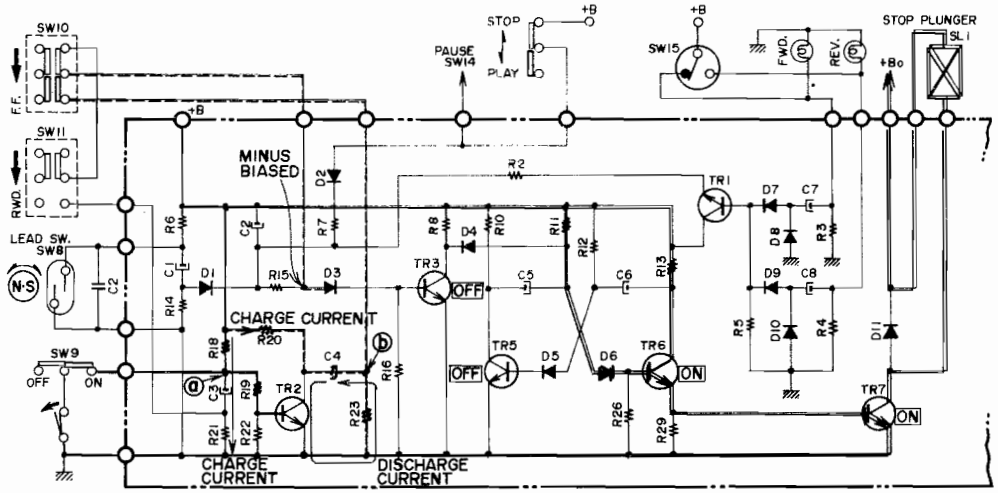


Fig. 43

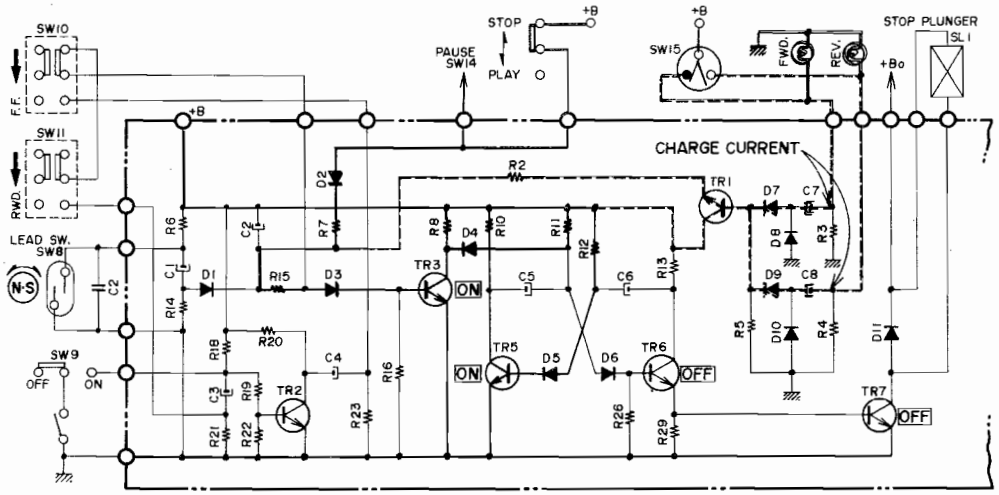


Fig. 44

1. DURING TAPE TRAVEL (Refer to Fig. 39)

1) During tape travel (recording, playback rewind, or fast forward) the tape counter rotates. A magnet also rotates according to tape counter revolutions and turns a read switch ON ⟷ OFF.
2) As the read switch is repeatedly turned ON ⟷ OFF, syscon circuit condenser C1 is charged and discharged repeatedly.
3) Accordingly, an A.C. signal pulse is generated at the anode side of Diode D1, and is rectified by D1. This pulse is smoothed at condenser C2 and becomes the base bias of transistor TR3. For this reason, TR3 is maintained at "ON" during tape travel.
4) Transistor TR3 collector becomes about the same electrical potential as ground, transistor TR6 base is reverse biased by means of Diode D4 and transistors TR6 and TR7 are maintained at "OFF" during tape travel.
5) Because TR7 is held at OFF, also stop plunger solenoid SL1 connected to the collector does not function.
6) Therefore, during tape travel, the syscon circuit works to hold stop plunger solenoid SL1 at OFF condition.

2. OPERATION WHEN READ SWITCH IS "ON" AND TAPE TRAVEL IS STOPPED (Refer to Fig. 40)

1) When the read switch is ON and tape travel stops, the electric charge charged at condenser C1 passes the read switch, and resistor R14 and is discharged.
2) Consequently, the anode side of diode D1 is negative biased and Transistor TR3 base bias becomes zero.
3) At the same time, transistor TR3 is turned OFF, diode D4 is reverse biased, and bias is supplied to transistor TR6 through resistor R11 and diode D6 and TR6 and TR7 are both turned ON.
4) A D.C. current flows to plunger solenoid SL1 which is connected to the collector of transistor TR7 as load and the plunger is pulled.
5) Thus, mechanism system operation begins according to deck mode (stop, reverse, or Fwd).
6) At the same time that stop plunger solenoid SL1 functioned, a charge current begins to flow to condenser C6 through resistor R12.
7) Condenser C6 charge current advances and when the terminal voltage increases to slightly more than the base cut-ff voltage, TR5 collector current begins to flow and condenser C5 commences discharge. As discharge advances, diode D6 anode is reverse biased.
8) Consequently, transistors TR6 and TR7 are turned OFF. (This TR6 and TR7 reverse operation time is extremely short).

3. OPERATION WHEN READ SWITCH IS "OFF" AND TAPE TRAVEL IS STOPPED. (Refer to Fig. 41)

1) When the read switch is OFF and tape travel stops, a charge current begins to flow from resistor R6 through condenser C1 to resistor R14 and C1 becomes charged.
2) While charge current is flowing to condenser C1, a drop in voltage at R14 occurs, but this does not continue after charge to C1 is completed.
3) Consequently, the anode of diode D1 becomes unbiased, and the base bias of Transistor TR3 also becomes non-existent.
4) Thus, at the same time, TR3 is turned OFF and the same operation described in items 2-3) through 2-8) above takes place.
5) Therefore, regardless of the condition of the read switch, when tape travel stops, the syscon circuit functions and the mechanism system begins to operate.

4. MEMORY WIND OPERATION

As shown in Fig. 42, there is a switch inside the tape counter which makes contact when the tape counter scale reaches "900" and separates when the scale reaches "000". Memory Wind Switch SW19 is thus turned ON, and when the scale reaches "000", the syscon circuit operates and the deck enters STOP mode.

OPERATION DURING REWIND (Refer to Fig. 42)

1) At RWD mode, syscon condenser C3 is charged (resistor R18 ⟶ condenser C3 ⟶ resistor R21) and bias is supplied to the base of transistor TR2 and TR2 is held at ON condition.
2) When the decreasing tape counter scale becomes "000", the contact point inside the tape counter which was momentarily activated at "999", makes contact and the electric charge (charged at condenser C3) passes resistor R21 and as shown in Fig. 42, discharge begins.
3) As condenser C3 begins to be discharged, the voltage at point ⓐ increases and becomes minus and the anode side of diode D3 is minus biased.
4) Consequently, transistor TR3 is turned OFF and stop plunger solenoid SL1 operates and the deck enters STOP mode in the same way as is explained in Section VIII, Item 1,1).

OPERATION DURING FAST FORWARD
(Refer to Fig. 43)

1) At F.FWD mode, when the tape counter scale reaches "900", the contact point inside the tape counter makes contact and point ⓐ voltage becomes zero.
2) Therefore, transistor TR2 is turned OFF, TR2 collector voltage increases and at the same time a charge current begins to flow to condenser C4 through resistor R20.
3) The charge to condenser C4 is of extremely short durations.
4) At F.FWD, when the tape advances to "000", the contact point inside the tape counter mementarily separates.
5) At the same time that the contact point releases, a charge current begins to flow to condenser C3.
6) After a short period of time when charging is completed point ⓐ voltage becomes high, bias is supplied to the base of transistor TR2, and TR2 is turned ON.
7) When TR2 is turned ON, the electric charge (charged at condenser C4 while TR2 was turned OFF) passes resistor R23 from TR2 and discharge begins.
8) Consequently, point ⓑ electrical potential becomes largely minus and the anode side of diode D3 is minus biased.
9) Therefore, transistor TR3 is turned OFF and stop plunger solenoid SL1 operates and the deck enters STOP mode in the same way as explained in Section VIII, Item 1, 1).

5. SYSCON MALFUNCTION PREVENTION CIRCUIT (Refer to Fig. 44)

This circuit is for preventing syscon malfunction when the power switch is turned on or the machine set to FWD or REV from stop mode.

SYSCON MALFUNCTION PREVENTION WHEN POWER SWITCH IS TURNED ON

1) When the Power Switch is turned ON, power is supplied to the syscon circuit. However, the various transistors inside the syscon must be maintained at a stabilized condition as shown in Fig. 44.
2) Therefore, the moment the Power Switch is turned ON, current passes diode D2 and flows to TR3 through resistor R7, resistor R15 and diode D3 and TR3 is turned ON.
3) Because TR6 assumes an OFF condition due to TR3 having begin turned ON, TR5 is stabilized at ON, and TR6, and TR7 at OFF condition.

SYSCON MALFUNCTION PREVENTION WHEN DECK ENTERS REV OR FWD FROM STOP MODE

1) Once power is supplied, the syscon assumes a stabilized condition as described above. However, as shown in Fig. 42, because play switch SW12 separates when the Fwd Button is depressed, syscon circuit operation becomes unstable.
2) Therefore, when tape travel begins, transistor TR1 is momentarily turned ON by micro switch SW15 until bias is supplied to the base of transistor TR3, bias is supplied to TR3, and the syscon circuit is maintained at a stabilized condition.

X. DOLBY N.R. CIRCUIT OPERATION

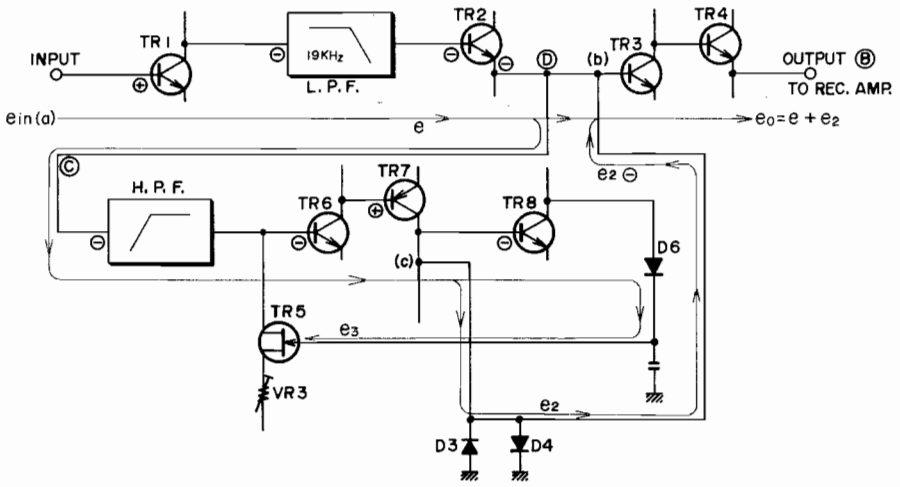


Fig. 45

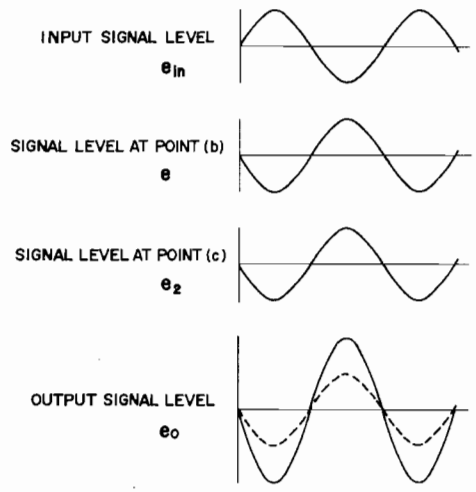


Fig. 46 Level and phase of each points at inolividual frequency

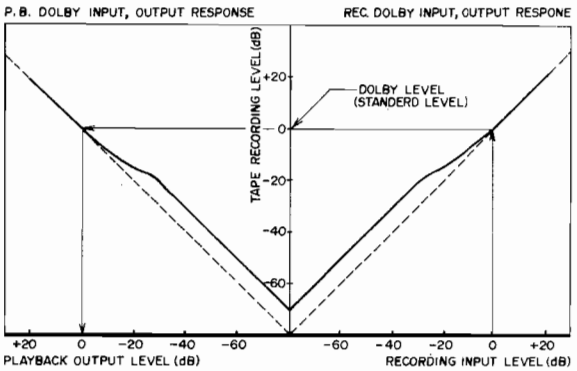


Fig. 47

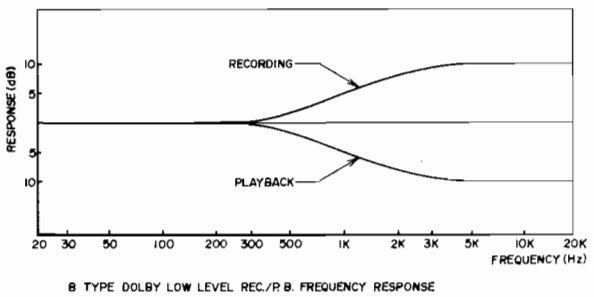

RESPONSE (dB)
RECORDING
PLAYBACK
20 30 50 100 200 300 500 1K 2K 3K 5K 10K 20K
FREQUENCY (Hz)
B TYPE DOLBY LOW LEVEL REC./P.B. FREQUENCY RESPONSE

Fig. 48

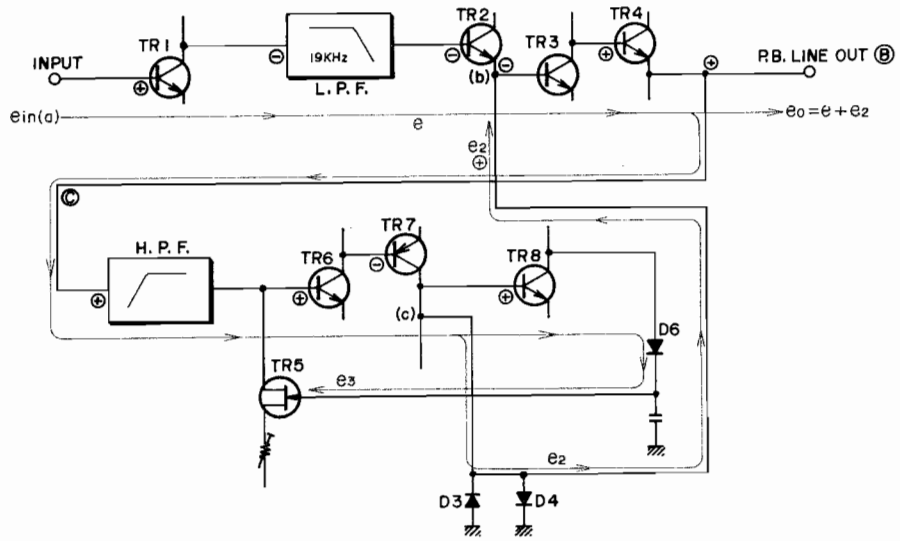


Fig. 49

Dolby is a trademark of Dolby Laboratories, Inc. Under License from Dolby Laboratories, Inc.

1. RECORDING BOLBY N.R. SYSTEM (Refer to Figs. 45 and 46)

1) At recording mode, the input signal passes TR1, then the low pass filter, TR2, TR3, and TR4 and appears at point Ⓑ as the output signal.
   Also the signal from TR2 passes the high pass filter and is amplified at TR6 and TR7. At this time, the signal which passes TR8 is rectified at D6 and supplied to TR5 (FET) gate.
   This D.C. bias causes the FET to act as a variable resistor and change the impedance between the drain and source, and TR6 input signal is controlled.
2) When the input signal level is small, TR5 (FET) has a certain impedance value which becomes like an electronic attenuator. At this time, TR6 input signal e is attenuated by the high pass filter and TR5 and becomes e/k.
   (k represents attenuator constant)
   This signal is amplified at TR6 and TR7. If we let A represent the degree of amplification at this time, output voltage e_2 becomes:

$$e_2 = e/k \cdot A \quad \text{..... (formula 1)}$$

   Here, if we let m represent A/k, formula 1 becomes:

$$e_2 = m \cdot e \quad \text{..... (formula 2)}$$

   Because output signal e_0 is the composite signal of input e (signal after it has passed TR1 and the low pass filter) and e_2 (the signal controlled by FET), e_0 becomes:

$$e_0 = e + e_2 = e + me \quad \text{..... (formula 3)}$$

   In formula 3, Dolby recording circuit output signal e_0 is recorded at a 10 dB higher level in relation to a 30 dB lower input level than the Dolby level. (Refer to Fig. 47)
   (Output signal e_0, at over 400 Hz signal, becomes 10 dB higher than input signal e)
3) When input signal e in gradually becomes large, the D.C. voltage which was amplified at TR8 and rectified at D6 also becomes large.
   When this happens, TR5(FET) impedance gradually approaches zero, For this reason, e signal level is greatly decreased by FET operation.
   That is to say that with regards to signal over the Dolby level (Fig. 47), the signal supplied to the base of TR6 is greatly reduced and the situation develops wherein $e \gg me = e_2$. For this reason, formula 3 becomes:

$$e_0 = e + me = e \quad \text{..... (formula 4)}$$

   Therefore, relative to the signal above the Dolby level, ratio of input and output becomes an equal 1:1. (Fig. 47)

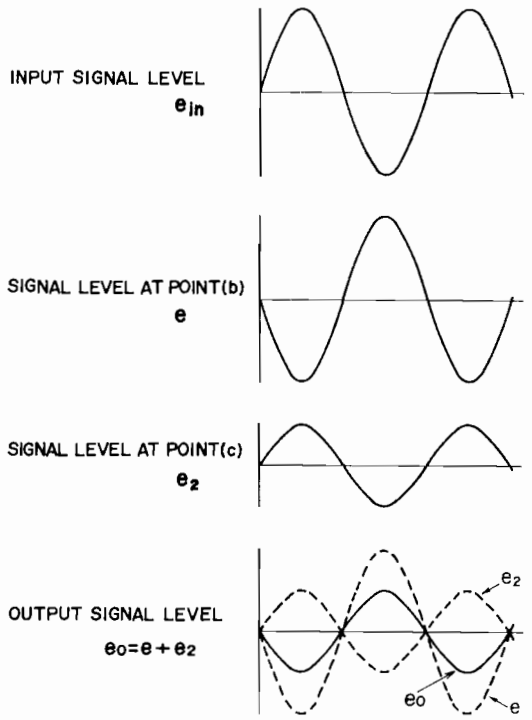


Fig. 50 Level and phase of each points at individual frequency

2. PLAYBACK DOLBY N.R. SYSTEM (Refer to Figs. 49 and 50)

1) At playback mode, the input signal passes TR1, then the low pass filter, TR2, TR3, and TR4 and appears at point Ⓑ as the output signal.
   TR4 output signal passes the high pass filter and is amplified at TR6 and TR7. At this time, the signal which passes TR8 is rectified at D6 and supplied to TR5 (FET) gate. FET functions by means of this D.C. bias and the signal to TR6 is controlled.
2) Also TR7 output signal is changed by the characteristic of diodes D3 and D4 and is supplied to point ⓑ as e_2 in Fig. 47. This e_2 signal is added at point (b) as the reverse phase of signal e, and this signal is dolbyized to become output signal e_0. Expressed by a formula, this beocmes:

$$e_0 = e + (-e_2) \quad \text{..... (minus indicates reverse phase)}$$
$$= e + (-me) \quad \text{..... (formula 5)}$$

3) (Refer to Figs. 49 and 50)
   With the playback Dolby N.R. System, signals recorded above the dolby level are played back at a 1:1 ratio, and signals recorded at a low level of under -20 dB on the tape (dolbyized recorded signals) are reduced by 10 dB and played back. At this time, because the noise level is also reduced by 10 dB, the S/N ratio is improved.
4) Therefore, the difference in operation between Recording Dolby N.R. System and Playback Dolby N.R. System is the phase relation of the signals supplied to point (b) in the figure.

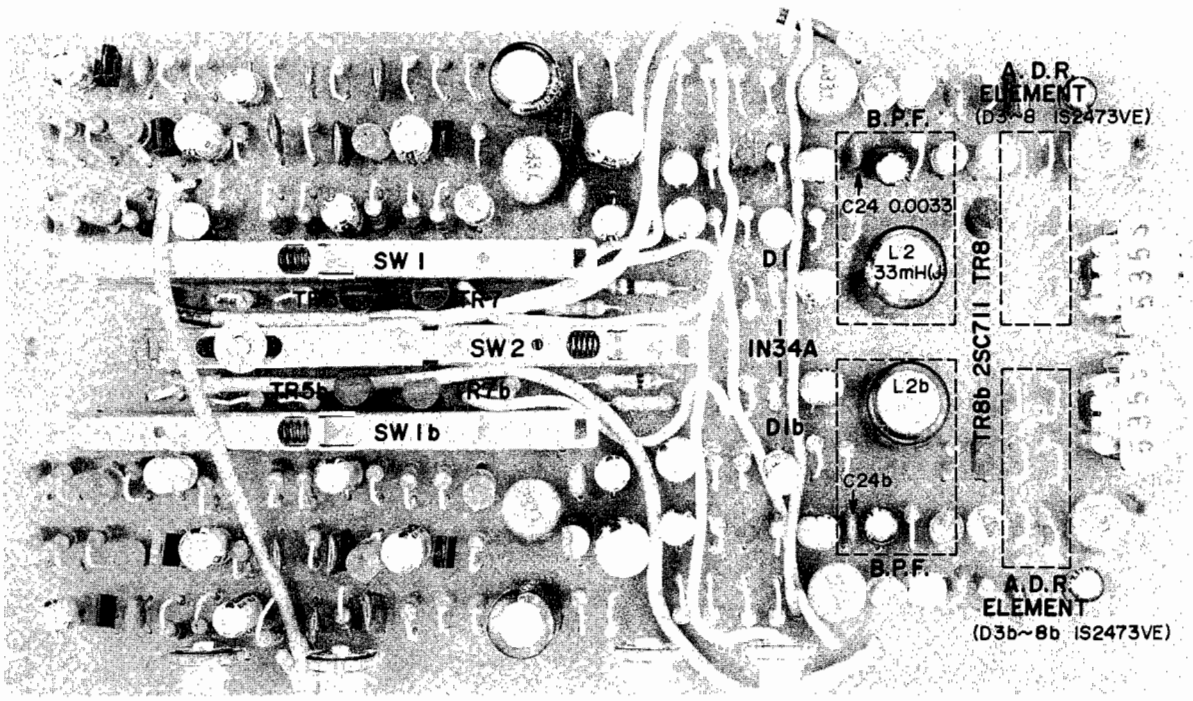


Fig. 51

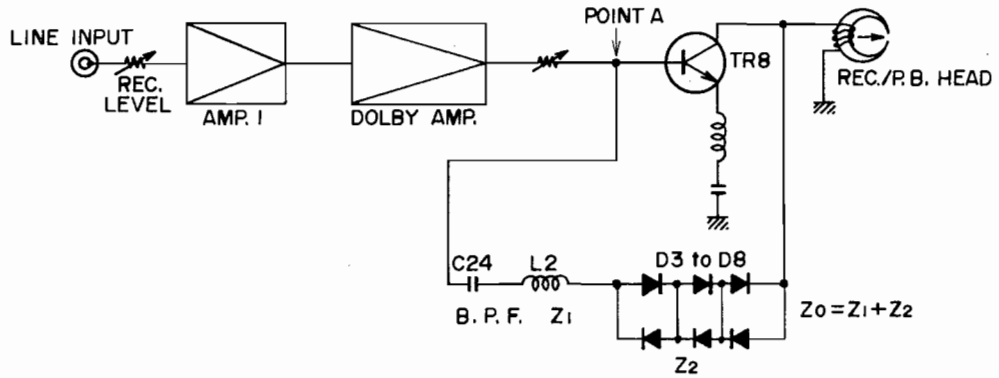


Fig. 52 A.D.R. Block Diagram (at Rec. mode)

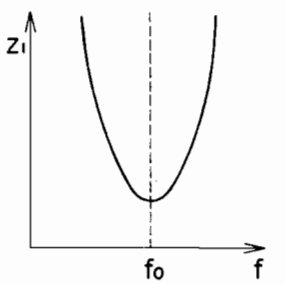


Fig. 53 B.P.F./Impedance characteristics

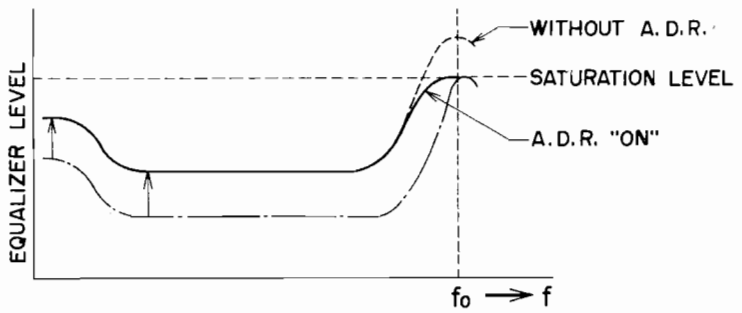


Fig. 54 Recording Equalizer characteristics

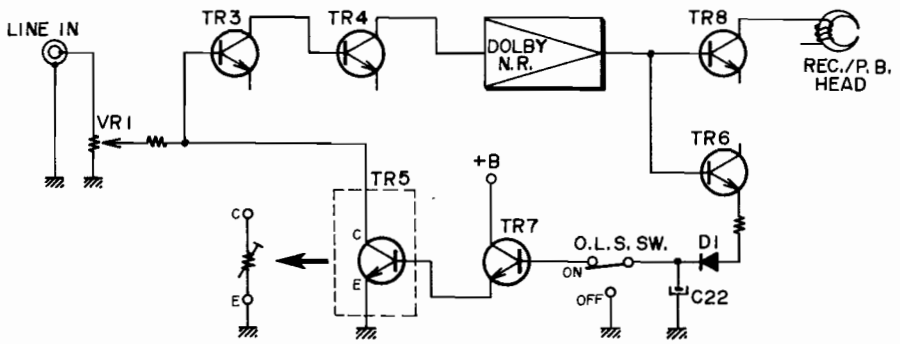


Fig. 55 O.L.S. Block Diagram

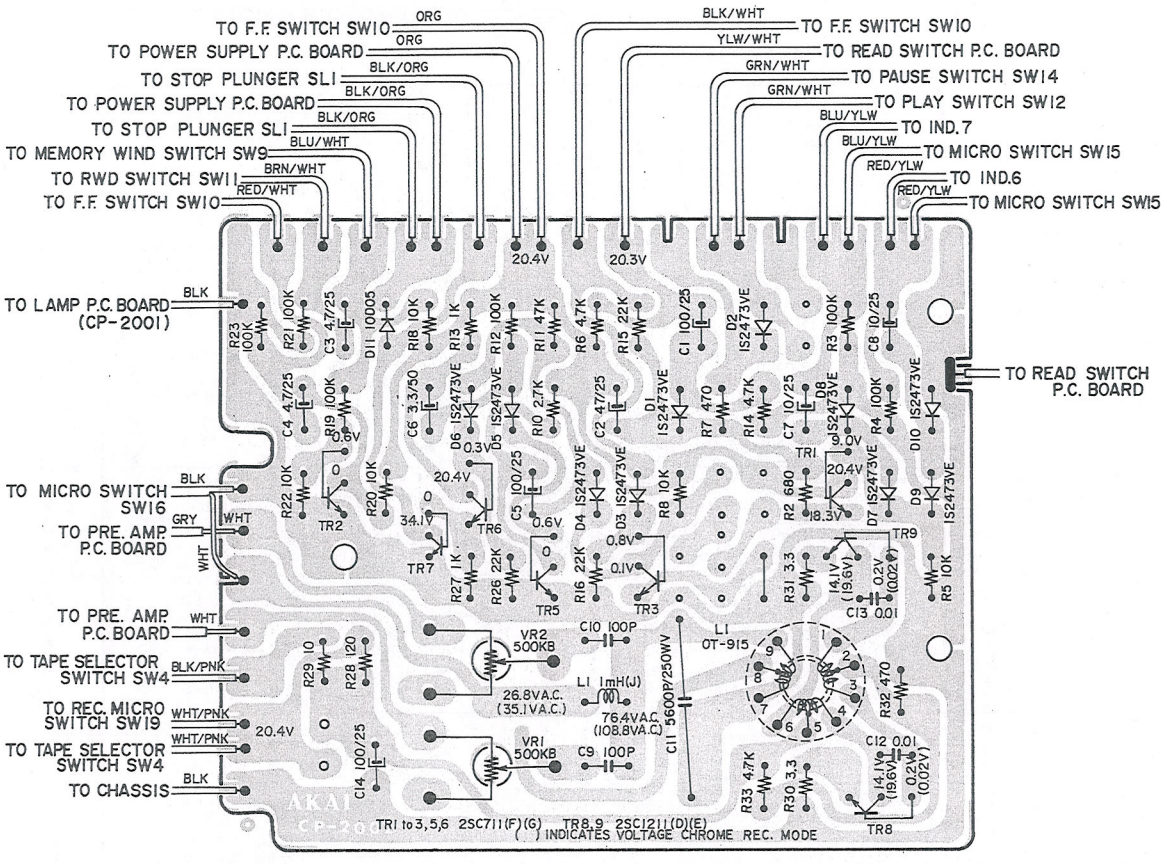
1. OPERATING PRINCPALS OF A.D.R. (AUTOMATIC DISTORTION REDUCTION) SYSTEM (Refer to Figs. 51 and 52)

1) Refer to Fig. 52
The combined impedance of the B.P.F (Band Pass Filter) comprised of Diodes D3 through D8 and L2 and C24 suitable for TR8 feedback circuit is represented by Zo. Zo is comprised of B.P.F. impedance Z_1 which is changed by frequency, and Diode impedance Z_2 which is changed by the size of the signal level.
2) Refer to Fig. 53
B.P.F. Z_1 impedance resonates in the vicinity of peaking frequency fo of the recording equalizer characteristics, and at resonance time, Z_1 impedance becomes minimum.
3) Refer to Fig. 52
The frequency band is wide at the line input and when a uniform level signal is introduced, it is amplified at Amp. 1 and added to the Dolby Amp. input. This dolbyized signal then passes TR8 and is supplied to the recording head. At this time, when comparing the high range frequency with the low range frequency of the signal current flowing to the recording head, the high range current volume is greater.
4) Refer to Fig. 54
Therefore, in making a high level recording, the recording equalization will relatively increase and in the vicinity of fo frequency, the recording equalizer will reach it's peak and exceed the saturation level of the magnetic tape.
However, at this time, TR8 output passes the A.D.R. element which is comprised of D3 through D8, and the fo vicinity frequency only is allowed to pass the B.P.F. and is supplied to point (A) in Fig. 52.
5) Because the signal to TR8 base and the feedback signal are reverse phased in relation to each other, TR8 gain is attenuated and the recording head electric current is controlled.
6) Because the B.P.F. works in relation to fo vicinity, the current supplied to the recording head is controlled and at recording time the equalization level declines. For this reason, the output is below the saturation level and an undistorted signal is recorded on the magnetic tape.

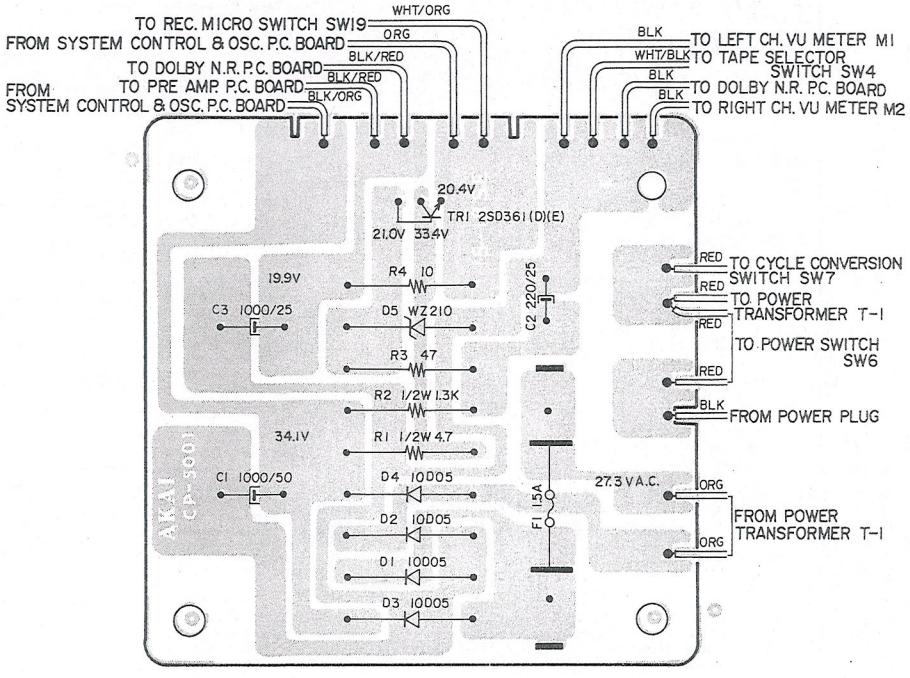
2. O.L.S. (OVER LEVEL SUPPRESSOR) CIRCUIT OPERATION (Refer to Fig. 55)

1) When a signal is introduced of which the input level is over "0" VU and the O.L.S. Switch is at OFF position, the saturation level of the tape is exceeded and distortion is recorded.
2) Therefore, it is necessary to lower the signal level to "0" VU in order to record at an undistorted level and this is accomplished with the O.L.S. circuit. When the O.L.S. Switch is set to ON position, at "0" VU signal time, current does not flow to Diode D1 connected to the output side of transistor TR6. However, when the signal is over "0" VU current flows to D1 and condenser C22 is charged. Because C22 becomes charged, D.C. bias is supplied to transistor TR7.
3) When D.C. bias is supplied to TR7, this causes emitter current to flow and this current is supplied to the base of TR5 as D.C. bias.
4) At this point, the resistance value between TR5 emitter and collector is changed by the D.C. bias to TR5. Therefore TR5 is employed as a variable resistor.
5) Thus, when an input signal of over "0" VU is introduced, TR5 variable resistor automatically changes the signal depending upon signal level, and by means of TR3 input signal control, the signal level is lowered to "0" VU and recorded on the tape.

2. SYS. CON. & OSC. P.C. BOARD CP-2002

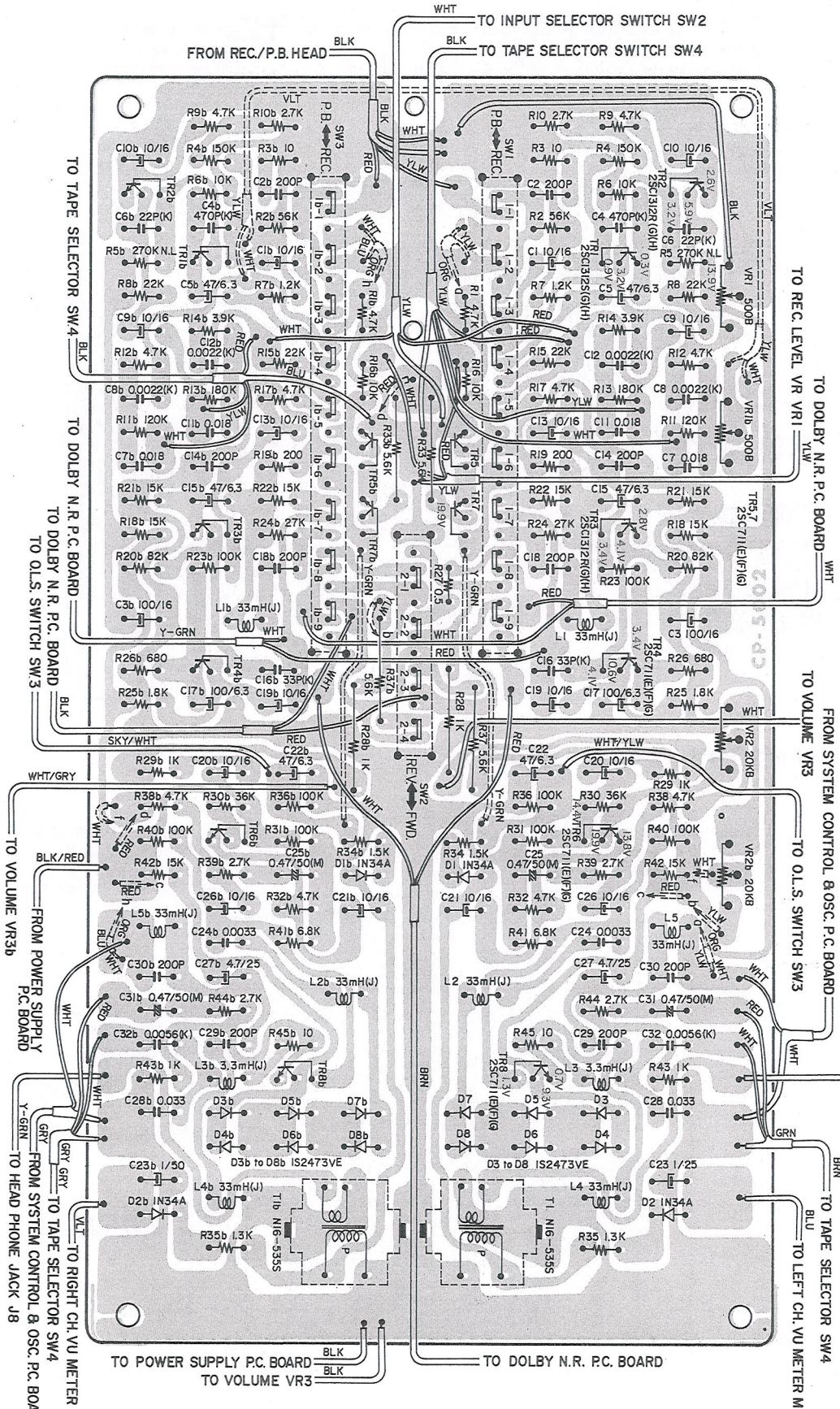

TO F.F. SWITCH SW10
TO POWER SUPPLY P.C. BOARD
TO STOP PLUNGER SL1
TO POWER SUPPLY P.C. BOARD
TO STOP PLUNGER SL1
TO MEMORY WIND SWITCH SW9
TO RWD SWITCH SW11
TO F.F. SWITCH SW10
TO F.F. SWITCH SW10
TO READ SWITCH P.C. BOARD
TO PAUSE SWITCH SW14
TO PLAY SWITCH SW12
TO IND.7
TO MICRO SWITCH SW15
TO IND.6
TO MICRO SWITCH SW15
TO LAMP P.C. BOARD (CP-2001)
TO READ SWITCH P.C. BOARD
TO MICRO SWITCH SW16
TO PRE. AMP. P.C. BOARD
TO PRE. AMP. P.C. BOARD
TO TAPE SELECTOR SWITCH SW4
TO REC. MICRO SWITCH SW19
TO TAPE SELECTOR SWITCH SW4
TO CHASSIS
20.4V
20.3V
TR1 to 3,5,6 2SC711(F)(G) TR8,9 2SC1211(D)(E)
( ) INDICATES VOLTAGE CHROME REC. MODE

3. POWER SUPPLY P.C. BOARD CP-5001

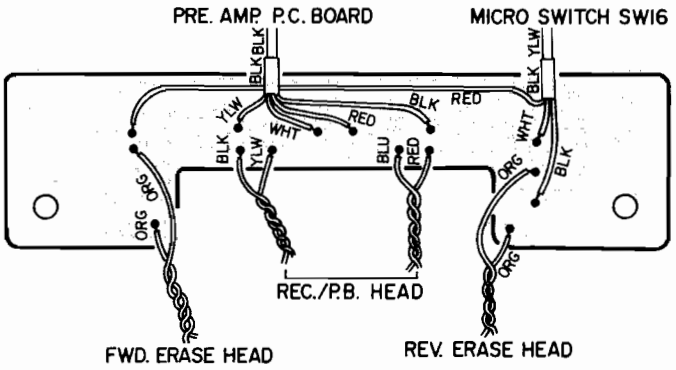

TO REC. MICRO SWITCH SW19
FROM SYSTEM CONTROL & OSC. P.C. BOARD
TO DOLBY N.R. P.C. BOARD
FROM SYSTEM CONTROL & OSC. P.C. BOARD
TO PRE AMP. P.C. BOARD
TO LEFT CH. VU METER M1
TO TAPE SELECTOR SWITCH SW4
TO DOLBY N.R. P.C. BOARD
TO RIGHT CH. VU METER M2
TO CYCLE CONVERSION SWITCH SW7
TO POWER TRANSFORMER T-1
TO POWER SWITCH SW6
FROM POWER PLUG
FROM POWER TRANSFORMER T-1
20.4V
21.0V 33.4V
19.9V
34.1V
27.3 V.A.C.

XII. COMPOSITE VIEWS OF COMPONENTS

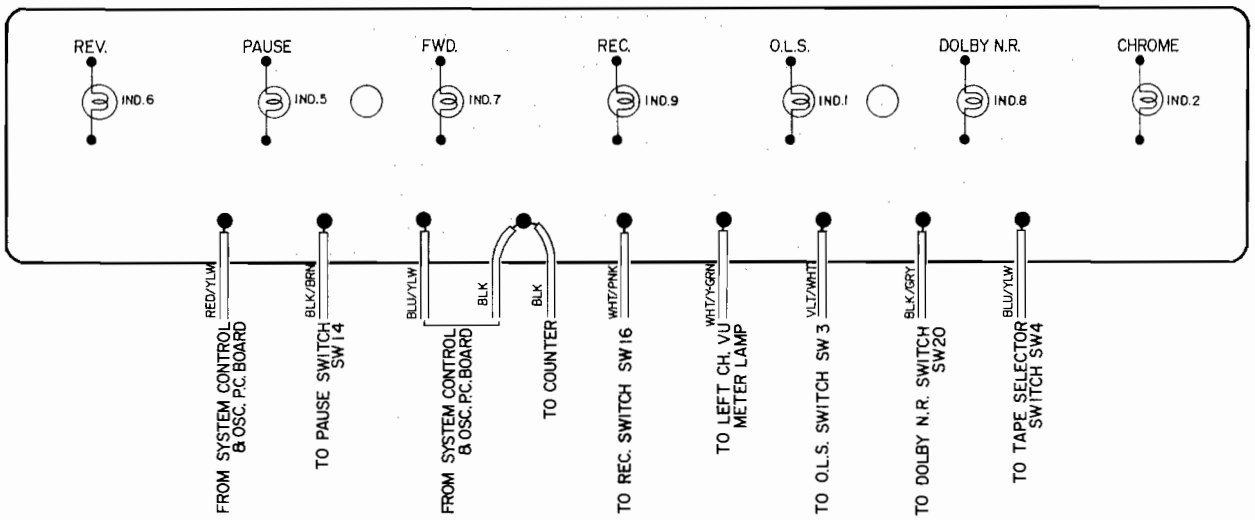
1. PRE AMP. P.C. BOARD CP-5002



4. HEAD CONNECTION P.C. BOARD CP-0054



5. LAMP P.C. BOARD CP-2001



SECTION 2

PARTS LIST

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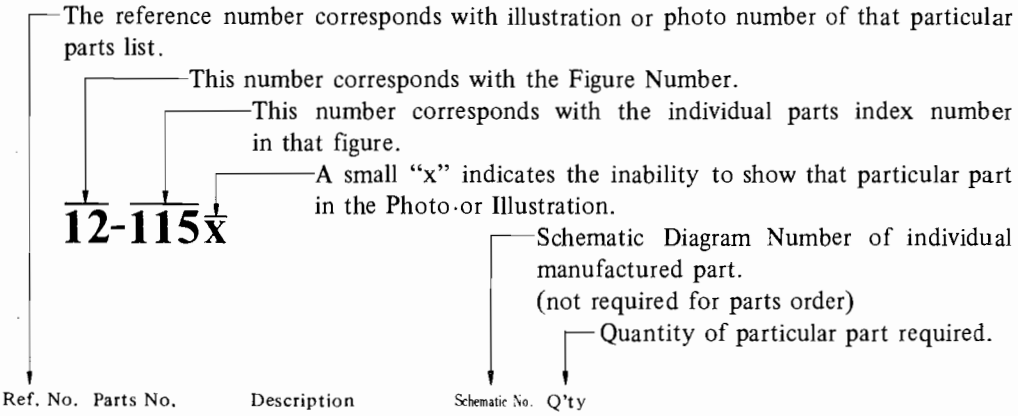
HOW TO USE THIS PARTS LIST

1. This parts list is compiled by various individual blocks based on assembly process.
2. When ordering parts, please describe parts number, serial number, and model number in detail.
3. How to read list.


The reference number corresponds with illustration or photo number of that particular parts list.
This number corresponds with the Figure Number.
This number corresponds with the individual parts index number in that figure.
A small "x" indicates the inability to show that particular part in the Photo·or Illustration.
12-115x
Schematic Diagram Number of individual manufactured part.
(not required for parts order)
Quantity of particular part required.

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
		FLYWHEEL BLOCK #13		
12-115x	800425	Flywheel Block Assy. Comp.	RDG#13	1
12-116	244506	Flywheel Only	RD-233	1
12-117x	244754	Felt, Flywheel	RD-275	1
12-118	251324	Main Metal Case	RD-236	1
12-119	253080	Main Metal	RD-237	1

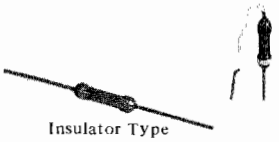
4. The symbol numbers shown on the P.C. Board list can be matched with the Composite Views of components of the Schematic Diagram or Service Manual.
5. The indications of Resistors and Capacitors in the photos of P.C. Board are being eliminated.
6. The shape of the parts and parts name, etc. can be confirmed by comparing them with the parts shown on the Electrical Parts Table of P.C. Board.
7. Both the kind of part and installation position can be determined by the Parts Number. To determine where a parts number is listed, utilize Parts Index at end of Parts List.
   It is necessary first of all to find the Parts Number. This can be accomplished by using the Reference Number listed at right of parts number in the Parts Index. (meaning of ref. no. outlined in Item 3 above).
8. Utilize separate "Price List for Parts" to determine unit price. The most simple method of finding parts Price is to utilize the reference number.

ELECTRICAL PARTS TABLE

Because the indication of resistors and capacitors in the P. C. Board photos are being eliminated, please confirm parts name and shape by comparing them with the parts shown in this table.

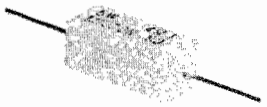
1

Solid Resistor

2 Stopper Type

Insulator Type
Carbon Resistor

3

Metal Oxide Film Resistor

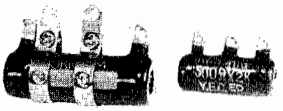
4

Cement Resistor

5

Wire-Wound Resistor

6

Thermister

7

Enamel Resistor

1

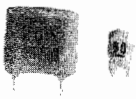
MP Capacitor (Tubular Type)

2

Plastic Capacitor

3

Mylar Capacitor

4

VFM (Hi-Q) Capacitor

5

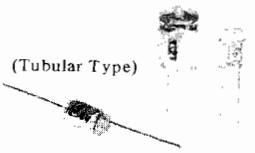
Mylar Capacitor

6

Tantalum Capacitor

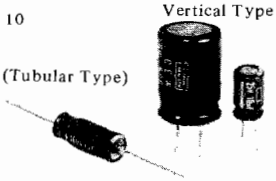
7

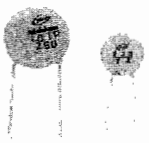
Oil Capacitor (Tubular Type)

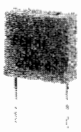
8 Vertical Type
(Tubular Type)

Styrol Capacitor

9

Electrolytic Capacitor (Tubular Type)

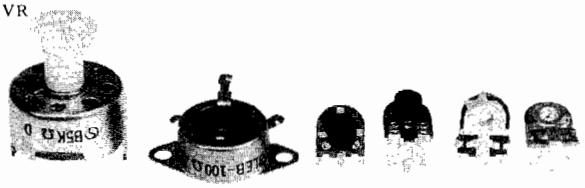
10 Vertical Type
(Tubular Type)

Electrolytic Capacitor

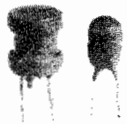
11

Ceramic Capacitor

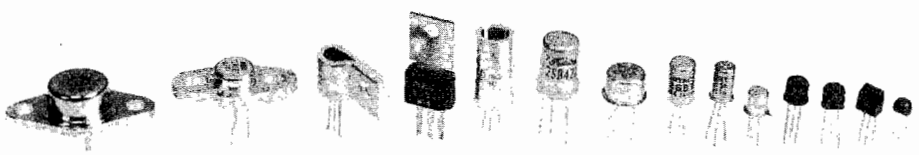
12

Metalized Mylar (Paper) Capacitor

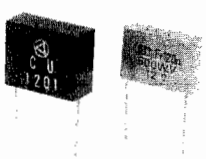
13

Trimmer Condenser

VR

Semi-Fixed Volume

L

Ferri Inductor

TR

Transistor

CR

Spark Quencher

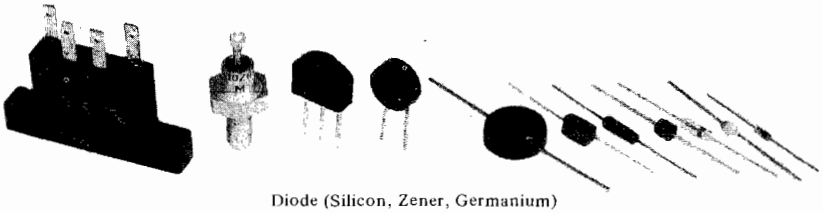
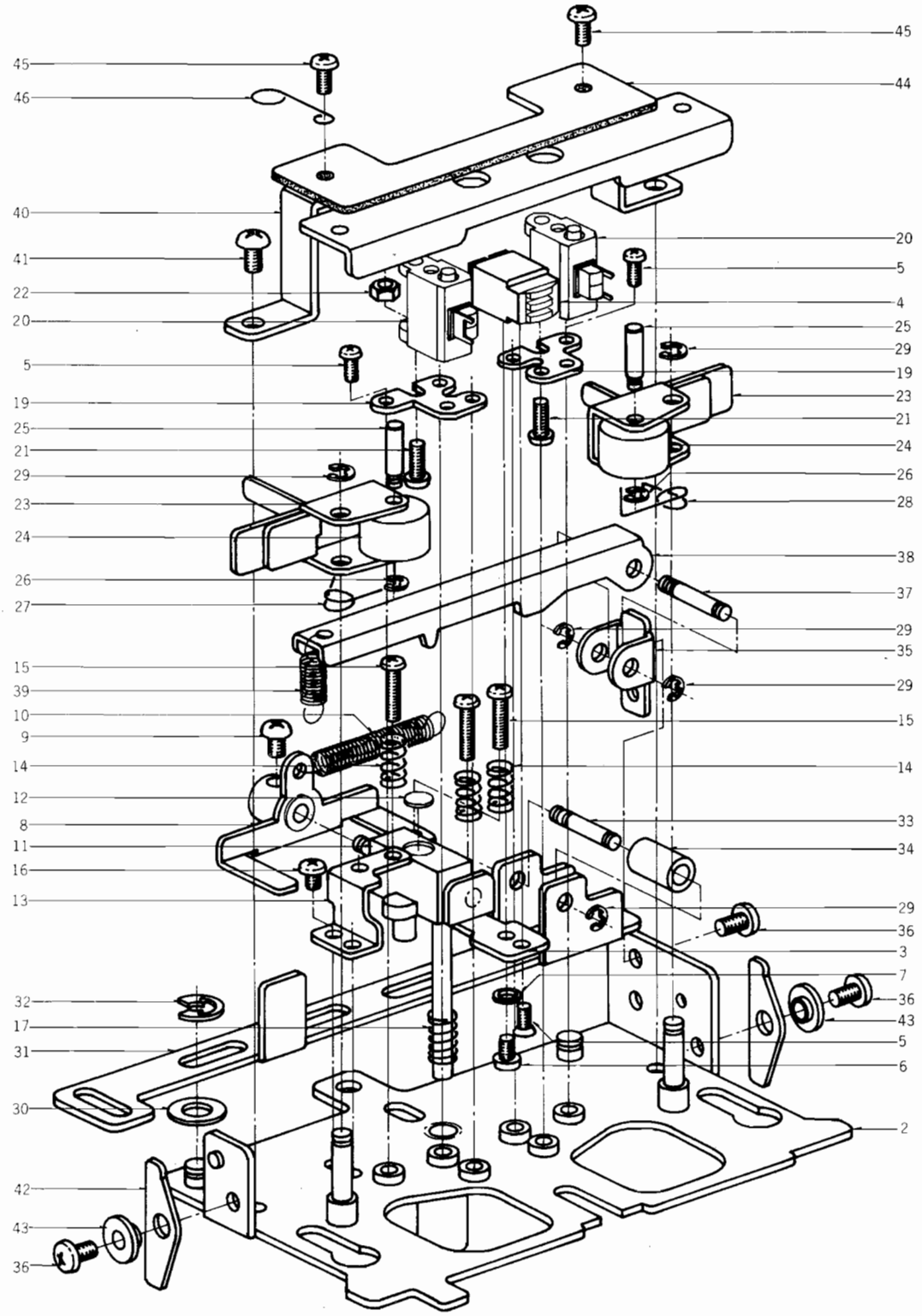
D

Diode (Silicon, Zener, Germanium)

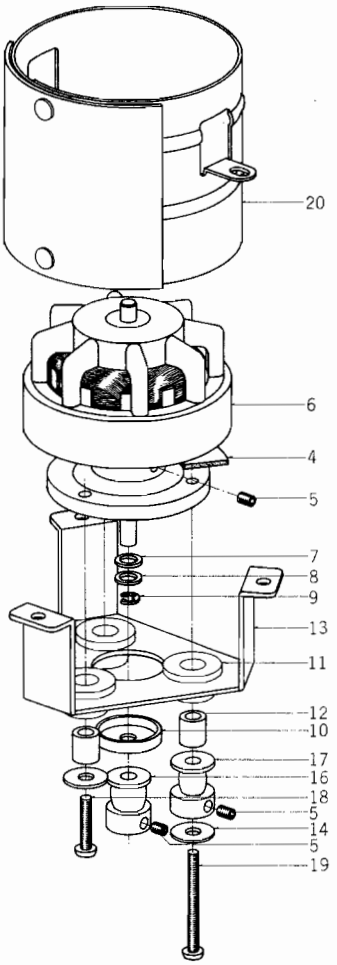
FIG. 1 ILLUSTRATION OF HEAD BLOCK



HEAD BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
1-1x	BH571972	Head Block Comp.	CP	1
1-2	HZ567033	Head Base, w/shaft	CP-0001	1
1-3	HZ567167	Head Mt. Table, w/shaft	CP-0025	1
1-4	HP571983	REC/PB. HEAD P4-350		1
1-5	ZS201475	Screw, pan head 2x3		7
1-6	ZS399148	Screw, countersunk head 2x3		1
1-7	ZW318014	Washer (BSP) D2.6x4.5x0.4t		5
1-8	HL569992	Azimuth Lever, w/bush	CP-0023	1
1-9	ZS375107	Screw, pan head 2.6x4		1
1-10	ZG567685	Azimuth Spring 1	CP-0040	1
1-11	HZ567112	Head Holder, w/shaft	CP-0014	1
1-12	ZW567630	Up & Down Washer	CP-0017	1
1-13	HZ567213	Adjust Table	CP-0031	1
1-14	ZG465636	Angle Adjust Spring	CG-0029	4
1-15	ZW572804	Screw, pan head 2x10		3
1-16	ZS365940	Screw, binding head 2.3x3		2
1-17	ZG567123	Up & Down Spring	CP-0020	1
1-18x	ZW484918	Screw, pan head 2x8		1
1-19	HZ567202	Erase Head Plate	CP-0029	2
1-20	HE571994	ERASE HEAD E4-160		2
1-21	ZS356681	Screw, pan head 2.3x5		2
1-22	ZW273688	Nut M2.3		2
1-23	HL567595	Pinch Roller Arm, w/lever	CP-0011	2
1-24	MP468292	Pinch Roller CG D=13	CG-0032	2
1-25	MS389981	Pinch Roller Shaft	CS-0011	2
1-26	ZW391397	'E' Ring 1.2M	6-1-9	2
1-27	ZG567088	Pinch Roller Spring 1	CP-0010	1
1-28	ZG567090	Pinch Roller Spring 2	CP-0010	1
1-29	ZW270088	'E' Ring 1.9M	6-1-9	6
1-30	ZW376380	Washer (Polyslider) D5.1x0.3x0.13t		2
1-31	HZ567235	Changing Slide	CP-0033	1
1-32	ZW290283	'U' Ring 2.85M	6-1-1	2
1-33	HZ567663	Roller Shaft	CP-0036	1
1-34	HZ567246	Roller	CP-0035	1
1-35	HZ567606	Up & Down Lever Table	CP-0013	1
1-36	ZS323728	Screw, binding head 3x5		3
1-37	HZ567641	Up & Down Lever Shaft	CP-0018	1
1-38	HL567101	Up & Down Lever	CP-0012	1
1-39	ZG567696	Azimuth Spring 2	CP-0041	1
1-40	SC567191	Head Cover	CP-0028	1
1-41	ZS338635	Screw, round head 3x3		2
1-42	HL567866	Pause Lever	CP-0008	2
1-43	HZ567077	Graduate Collar	CP-0009	2
1-44	EA584673	Head Repeating P.C. Board B	CP-0054	1
1-45	ZS356668	Screw, binding head 2.3x4		2
1-46	UM399071	Head Wiring Hook	CS-0021	1

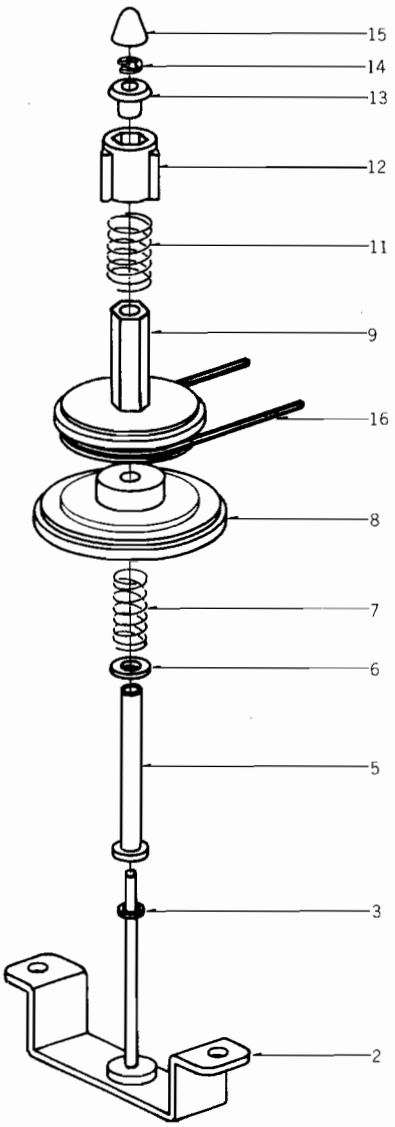
FIG. 2 ILLUSTRATION OF MOTOR BLOCK



MOTOR BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
2-1x	BM571904	Motor Block Comp.	CP	1
2-2x	BM591480	Motor Block Comp. (CEE)	CP	1
2-3x	BM591614	Motor Block Comp (CSA)	CP	1
2-4	EA391331	Motor Lead Terminal P.C. Board	CS-7025	1
2-5	ZS356804	Set Screw, hexagon Socket 3x4 (cup/p.)		4
2-6	MZ524092	Rotor Housing, w/shaft	5-1-5	1
2-7	ZW396415	Thrust Washer A, CS	CS-7029	3
2-8	ZW396426	Thrust Washer B, CS	CS-7029	3
2-9	ZW270101	'E' Ring 3M	6-1-9	1
2-10	UM394075	Oil Cut	CS-7028	1
2-11	MZ384164	Rubber Cushion Bush	24X0-717	3
2-12	UM469563	Rubber Cushion Sleeve, CG	CG-7010	3
2-13	MZ569250	Motor Bracket	CP-7001	1
2-14	ZW402322	Washer (SUP) D4.1x13x0.5t		3
2-15x	ZW273778	Earth Lug M3		1
2-16	MR569024	Motor Pulley (1) 60 Hz	CP-7002	1
2-17	MR595901	Motor Pulley (2) 50 Hz	CP-7005	1
2-18	ZS417148	Screw, binding head 3x15		2
2-19	ZS414055	Screw, bindin head 3x30		1
2-20	LM566921	Motor Shield	CP-1157	1
2-21	ZS325495	Tapping Screw #2 3x6		2

FIG. 3 ILLUSTRATION OF TAKE-UP TABLE BLOCK



TAKE-UP REEL TABLE BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
3-1x	BR571915	Take-up Reel Table Block Comp.	CP	1
3-2	MT578261	Reel Table Bracket, w/shaft	CP-1173	1
3-3	ZW364342	Washer (Polyslider) D1.7x D1.7x3.2x0.25t		2
3-4x	ZW601762	Washer (Luminar) D3.1x8x0.12t		1
3-5	MT387573	Take-up Reel Table Shaft	CS-2007	1
3-6	ZW355307	Washer (BSP) D2.6x6.9x0.5t		1
3-7	ZG387584	Clutch Spring	CS-2008	1
3-8	MT387595	Take-up Reel Table Pulley, w/ring	CS-2009	1
3-9	MT387628	Take-up Reel Table, w/ring	CS-2012	1
3-10x	MT387617	Clutch Felt	CS-2011	1
3-11	ZG385075	Reel Table Spring	CS-2014	1
3-12	MT605766	Reel Table Blade, V Type	CH-1070	1
3-13	MT387641	Take-up Reel Table Bush	CS-2015	1
3-14	ZW270088	'E' Ring 1.9M	6-1-9	1
3-15	MT394200	Take-up Reel Cap	CS-2105	1
3-16	MB415743	Counter Belt A	CC-1034	1

OPERATION BUTTON BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
4-1x	BZ571948	Operation Button Block	CP	1
4-2	UM569046	Direction Holder	CP-2010	1
4-3	UM568708	Direction slide 1	CP-2011	2
4-4	UM568721	Eject Slide 1	CP-2013	1
4-5	UM568710	Pause Slide 3	CP-2012	1
4-6	ZG568754	Button Spring	CP-2016	3
4-7	ML568743	Eject Lever	CP-2015	1
4-8	MS568732	Eject Shaft	CP-2014	1
4-9	ZW273756	Nut M3		1
4-10	ZW273745	Spring Washer M3		1
4-11	ZW290283	'U' Ring 2.85M	6-1-1	1
4-12	ZG227452	Spring D	900-118	1
4-13	ZG317766	Plunger Lever Spring	MR-19	1
4-14	SB569136	Direction Button	CP-2018	4
4-15	ES565290	Keyboard SW.	25-5-113	1
4-16	ZS325495	Tapping Screw #2 3x6		4

CHANGING BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
5-1x	BZ571950	Changing Block Comp.	CP	1
5-2	UM569057	Changing Bracket, w/shaft	CP-2019	1
5-3	ML568787	Changing Lever 2, w/pin	CP-2022	1
5-4	ZW290283	'U' Ring 2.85M	6-1-1	5
5-5	ML569147	Changing Lever 3, w/pin	CP-2023	1
5-6	UM568798	Changing Lever Slide, w/pin	CP-2025	1
5-7	ML568765	Changing Lever 1, w/pin	CP-2020	1
5-8	ZG568800	Changing Spring	CP-2026	1
5-9	ZW270088	'E' Ring 1.9M	6-1-9	2
5-10	ES389700	Micro SW. SS-5	25-1-19	2
5-11	EZ568811	Actuator A	CP-2028	1
5-12	ZW313481	Screw, binding head 2.3x16		2

When ordering parts, please describe Parts Number, Serial Number, and Model Number in detail.

FIG. 4 ILLUSTRATION OF OPERATION BUTTON BLOCK

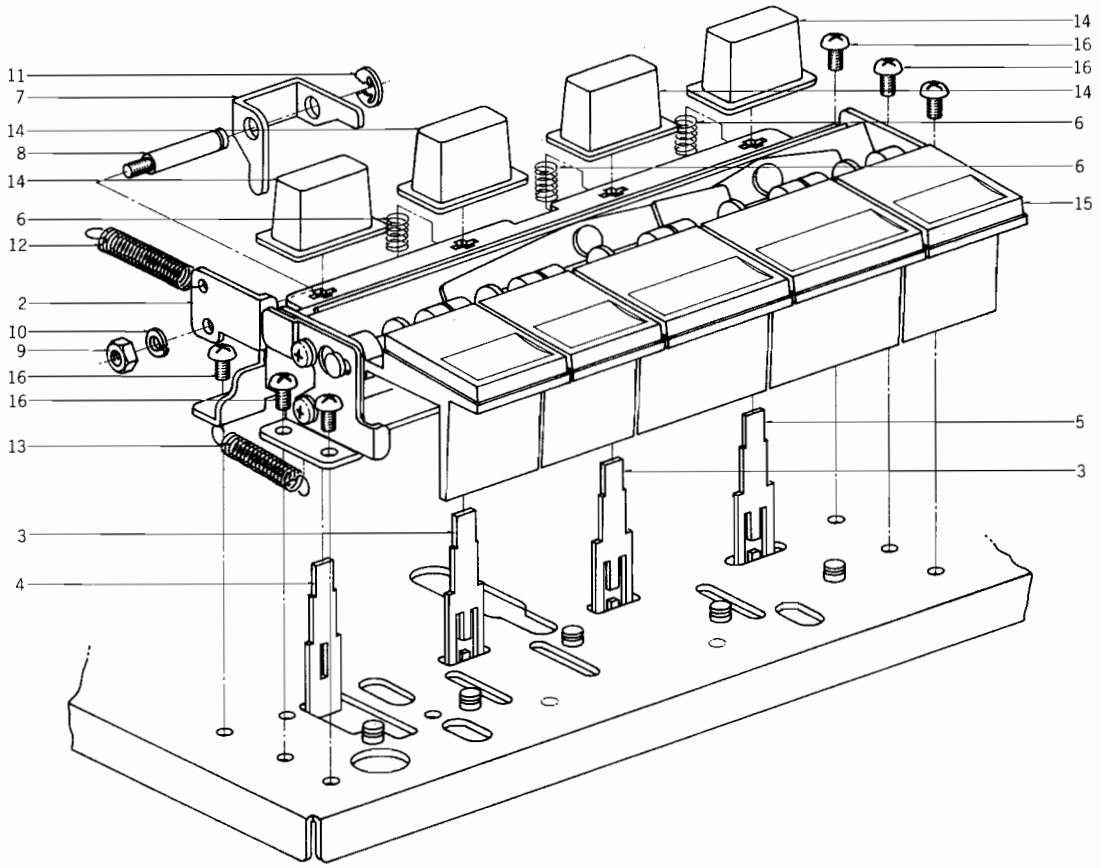
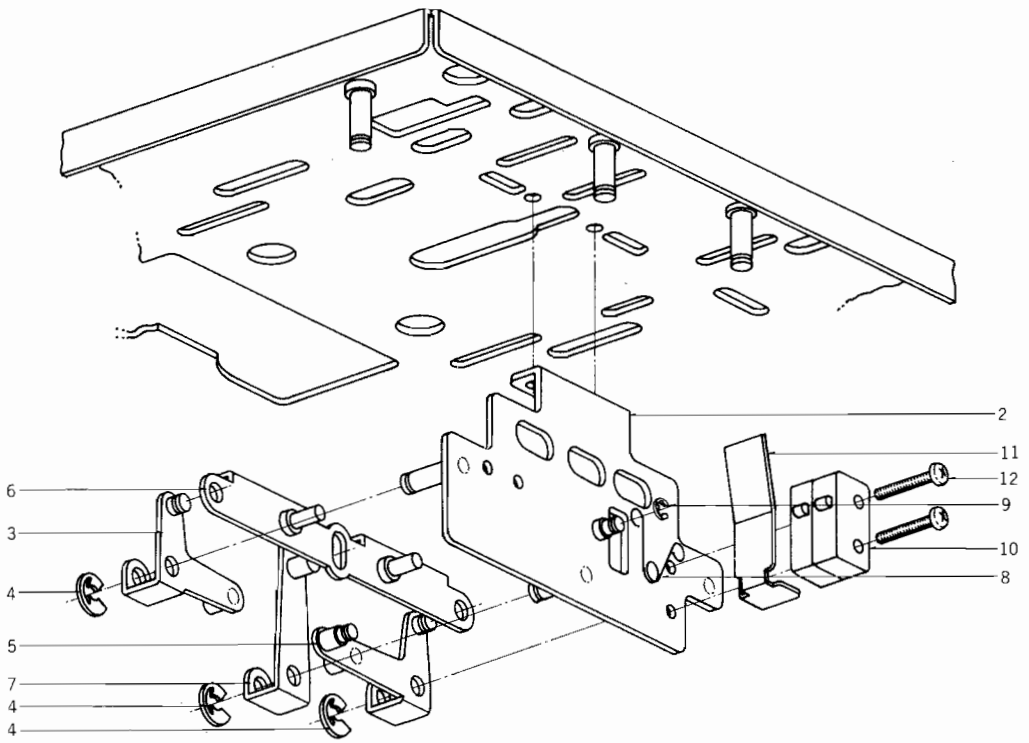


FIG. 5 ILLUSTRATION OF CHANGING BLOCK



MECH. FRAME BLOCK (1)

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
	LAMP HOUSE BLOCK			
6-1x	BZ571961	Lamp House Block Comp.	CP	1
6-2	UM569035	Lamp House	CP-2003	1
6-3	EA567786	Lamp P.C. Board	CP-2001	1
6-4	EL368774	Lamp 6.3V 180 MA	28-2-10	3
6-5	EL390576	Pilot Lamp (L/T) RM6-24V-50MA	28-2-6	4
6-6	ZS325495	Tapping Screw #2 3x6 (BR)		2
	MECH. FRAME BLOCK			
6-7	MZ567821	Mech. Frame, w/shaft	CP-1001	1
6-8	UM566515	PB Slide, w/pin	CP-1122	1
6-9	UM568023	Brake Slide	CP-1021	1
6-10	UM568034	Brake Shoe	CP-1022	1
6-11	ZG456930	Brake Spring	CG-1040	1
6-12	UM568124	FF Slide	CP-1031	1
6-13	ZW290283	'U' Ring 2.85M	6-1-1	31
6-14	ZW375952	Washer (Nylon) D7.1x13.6x1t		2
6-15	UM568135	Rewind Slide	CP-1032	1
6-16	UM568067	Rec. Slide	CP-1025	1
6-17x	MB415743	Counter Belt A	CC-1034	1
6-18	ML568282	Stop Lever	CP-1046	1
6-19	UM568157	Stop Slide	CP-1034	1
6-20	UM566537	Mode Slide, w/pin	CP-1124	1
6-21	ZW565200	Washer D4.1x10x0.3t		2
6-22	ZW479294	Washer (SUP) D4.2x10x0.8t		2
6-23	UM566741	Ball Retainer	CP-1155	1
6-24	ZS325495	Tapping Screw #2 3x6		19
6-25	MV249074	Steel Ball D4		1
6-26x	ZG615925	Mode Spring	CP-2202	1
6-27	ZW270088	'E' Ring 1.9M	6-1-9	3
6-28	UM566436	Mode Selector (1)	CP-1113	1
6-29	UM566458	Selector Slide, w/pin	CP-1115	1
6-30	UM566504	Head Base Slide	CP-1121	1
6-31	ZG387821	Rewind Spring	CS-2033	1
6-32	ML566820	Mode Selector Lever, w/pin	CP-1102	1
6-33	UM568045	PB. SW. Slide	CP-1023	1
6-34	ZG387178	Idler Tension Spring	CS-1106	1
6-35	ES568056	PB. SW. Table	CP-1024	1
6-36	ES589544	Push SW. UEG-42E	25-5-106	1
6-37	ZS356668	Screw, binding head 2.3x4		2
6-38	ML566831	Detector Lever, w/pin	CP-1100	1
6-39	UM566460	Detector Slide (1)	CP-1117	1
6-40	ZG594303	Detector Lever Spring	CP-1197	1
6-41	UM566324	Detector Slide (2), w/pin	CP-1097	1
6-42	ZW270101	'E' Ring 3M	6-1-9	2
6-43	ZG582840	Detector Spring	CP-1187	2
6-44	UM566335	Detector Slide (3), w/pin	CP-1098	1
6-45	UM457200	Cassette Base Bracket, w/pin	CG-1063	2
6-46	UM566818	Cassette Base	CP-1151	1
6-47	ZG457244	Cassette Retaining Spring	CG-1074	1
6-48	MH457255	Rec. Safety Pin	CG-1075	2
6-49	MH568506	Spring Shaft	CP-1068	1
6-50	MB577438	Cassettei Base Rubber	CP-1171	1
6-51	ES479496	Slide SW. S-2	25-3-67	1
6-52	ZS379405	ISO Screw, binding head 3x6		2
6-53	UM568271	Spring Rack	CP-1045	1
6-54	ZG598375	Cassette Base Spring	CP-1196	1
6-55	UM568258	Eject Slide (2)	CP-1043	1
6-56	ZG227452	Spring D	900-118	1
6-57	ML566493	Eject Prevention Lever	CP-1120	1
6-58	UM568181	Lamp Bracket	CP-1037	2
6-59x	UM516025	Magnet TG0034	5-1-8	1
6-60	MC565176	Counter SMP-390-35	9-1-31	1
6-61x	SB578777	Counter Cap	CP-1186	1
6-62	UM568620	Mode Bracket, w/shaft	CP-1076	1
6-63	ML569981	Mode Lever, w/pin	CP-1081	1
6-64	SK567461	Knob (1)	CP-5018	1
6-65	UM568236	Rec. Sw. Table	CP-1041	1
6-66	ES477966	Micro Sw. SS-5GL	25-1-23	1
6-67	ZS356714	Screw, binding head 2.3x8		2
6-68	UM566954	Side Bracket	CP-1150	1
6-69	ZG317766	Plunger Lever Spring	CP-1162	1
6-70	ZG232121	Tension Lever Spring	MH-143	1
6-71	ZG569384	Selector Spring	CP-1166	1
6-72	UM566447	Mode Selector (2)	CP-1114	1
6-73	ML566842	FF Stop Lever, w/pin	CP-1101	1
6-74	UM566875	FF Stop Rod	CP-1136	1

FIG. 7 ILLUSTRATION OF MECH. FRAME BLOCK (2)

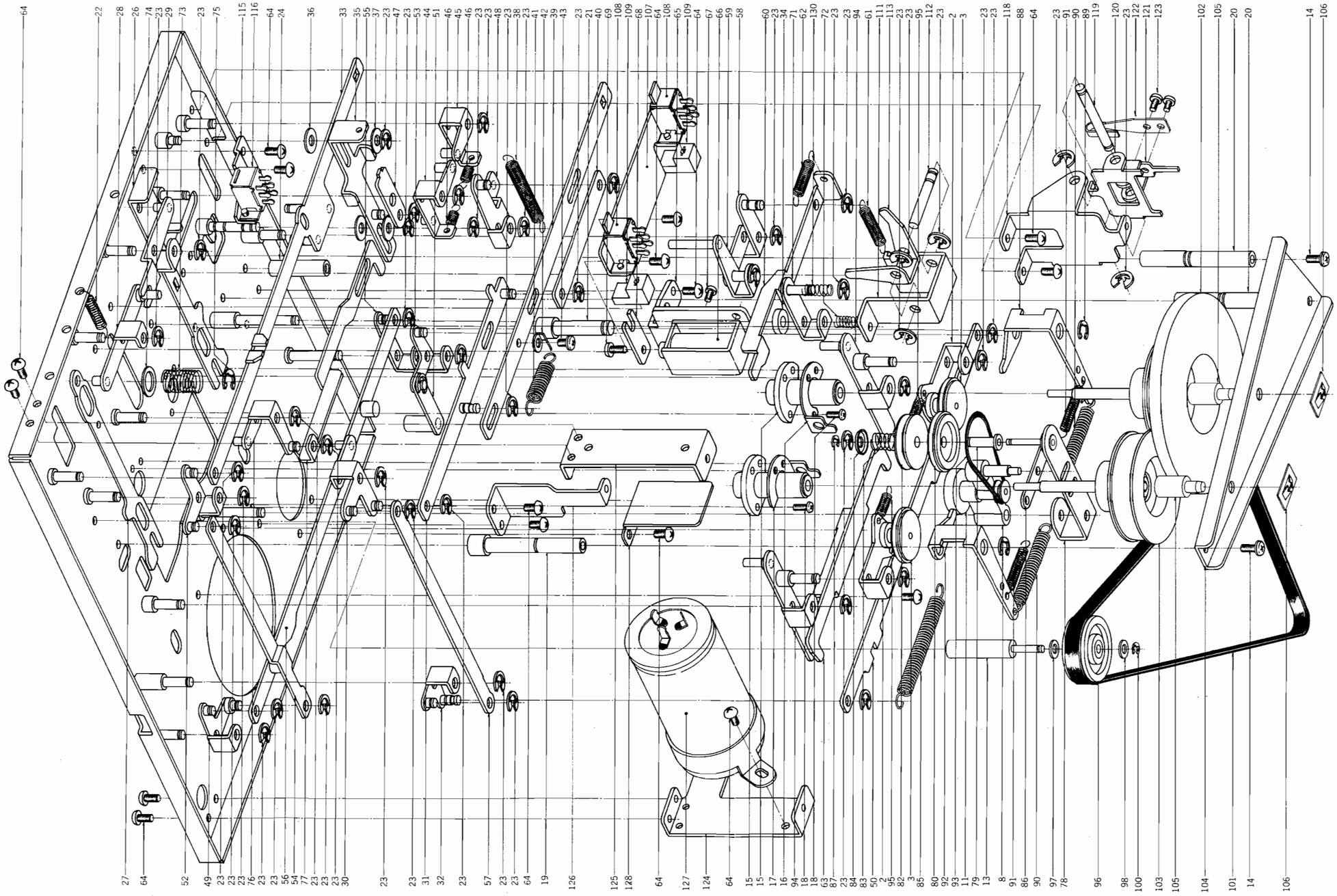
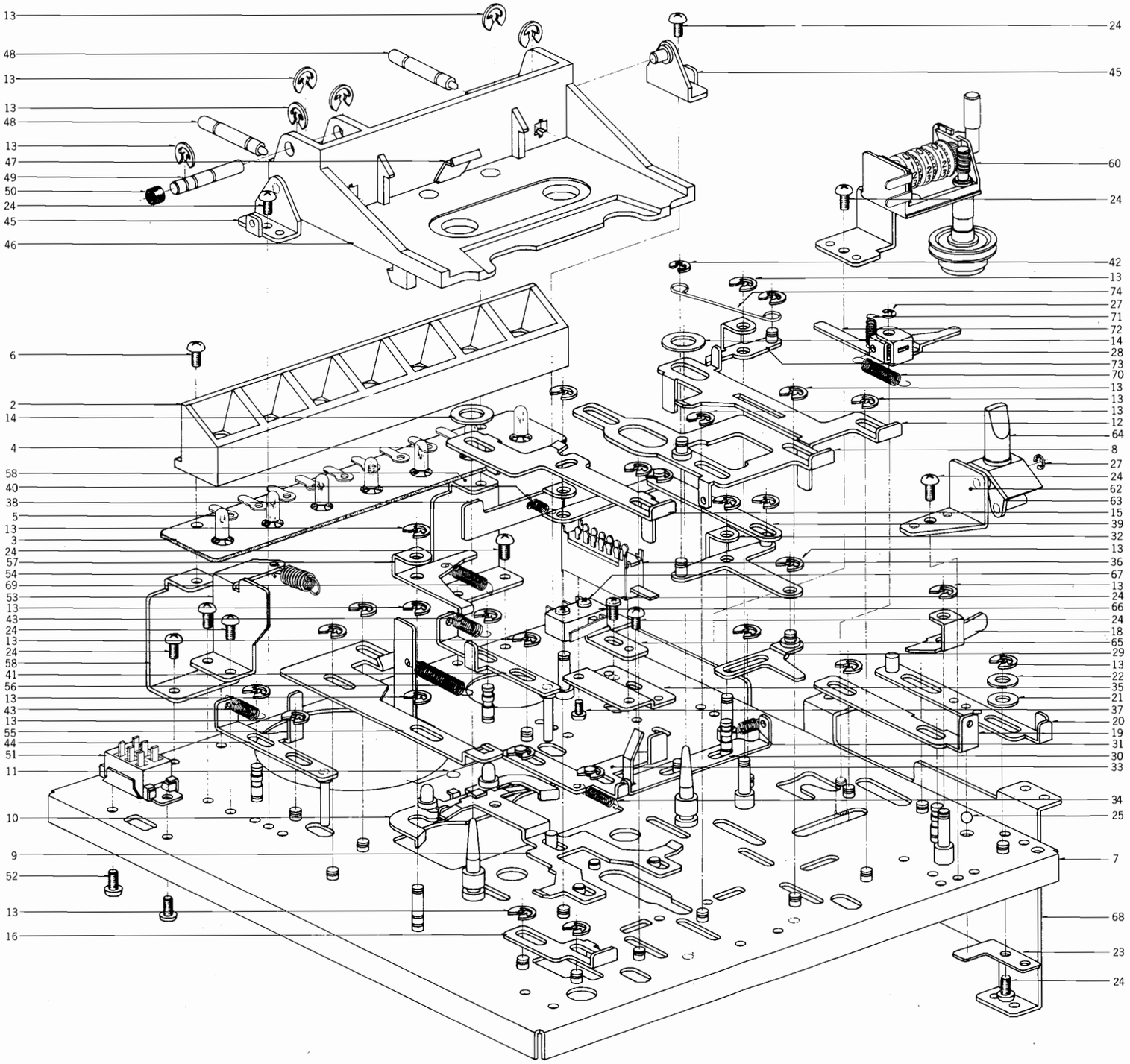


FIG. 6 ILLUSTRATION OF MECH. FRAME BLOCK (1)

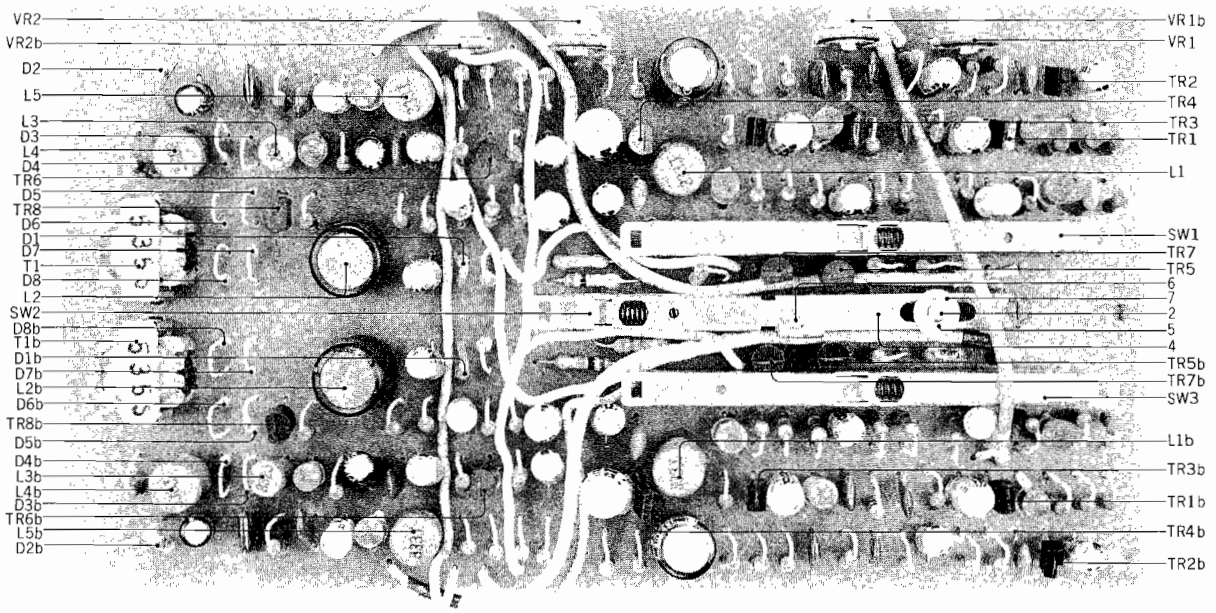


MECH. FRAME BLOCK (2)

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
		TAKE-UP LEVER BLOCK		
7-1x	BL571926	Take-up Lever Block Comp.	CP	1
7-2	ML568631	Take-up Lever 2-B, w/metal	CG-1028	1
7-3	MI456750	Take-up Wheel, w/ring	CG-1031	1
7-4x	ZW530504	Oil Cut Washer	CG-1102	1
7-5x	ZW474581	Washer (Teflon) D2.05x3.5x0.2t		1
7-6x	MR456761	Take-up Pulley	CG-1032	1
		WIND LEVER BLOCK		
7-7x	BL571937	Wind Lever Block Comp.	CP	1
7-8	ML566616	Wind Lever (2), w/metal	CP-1133	1
7-9x	MR566572	Wind Pulley (1)	CP-1128	1
7-10x	ZW381644	Washer (Polyslider) D2.1x4.0x0.13t		2
7-11	MR456840	Wind Pulley (2) (Flat)	CG-2017	1
7-12x	MS456851	Wind Pulley Shaft (1)	CG-2018	1
		MECH. FRAME BLOCK		
7-13	MS567843	Idler Shaft, w/shaft A	CP-1003	1
7-14	ZS322626	ISO Screw, binding head 3x8 w/washer		6
7-15	MV566910	Capstan Metal Case, w/metal	CP-1156	2
7-16	UM568214	Take-up Spring Rack A	CP-1040	1
7-17	UM568225	Take-up Spring Rack B	CP-1040	1
7-18	ZS375118	Screw, binding head 2.3x6		6
7-19	MH599804	Rewind Prop	CP-1195	1
7-20	MH566638	Flywheel Prop	CP-1138	2
7-21	MH578114	FF Prop	CP-1179	1
7-22	ZG542215	Spring B	CZ-1011	1
7-23	ZW290283	'U' Ring 2.85M	6-1-1	45
7-24	MH273295	Mech. Panel Prop, M-9	M9-302	1
7-25x	ZS321298	ISO Screw, binding head 3x8		1
7-26	UM568113	Pause Slide (1)	CP-1030	1
7-27	UM568146	Pause Slide (2)	CP-1033	1
7-28	ML568440	Pause Lever (2), w/pin	CP-1062	1
7-29	ML568451	Pause Lever (3), w/pin	CP-1063	1
7-30	ML566291	Rec. Lever, w/pin	CP-1094	1
7-31	UM566392	Sw. Slide (1), w/pin	CP-1109	1
7-32	ML568642	Changing Slide Lever 1-A, w/pin	CP-1026	1
7-33	UM566267	Changing Slide (1), w/prop	CP-1089	1
7-34	UM568372	Changing Collar	CP-1055	2
7-35	UM568552	Reverse Slide, w/sahft 3	CP-1072	1
7-36	ZW565198	Washer D4.5x10x0.5t		2
7-37	ZW565200	Washer D4.1x10x0.3t		2
7-38	ZG567011	Slide Spring	CP-1165	1
7-39	UM566414	Sw. Slide (2)	CP-1111	1
7-40	UM568091	Sw. Slide (3)	CP-1028	1
7-41	ZG578924	Rec. Spring (2)	CP-1177	1
7-42	ZW273778	Earth Lug M3		1
7-43	ZS349288	ISO Screw, binding head 3x5, w/washer		1
7-44	ML568585	Reverse Lever (1), w/pin	CP-1078	1
7-45	ML568596	Reverse Lever (2), w/pin	CP-1079	1
7-46	ZG586427	Reverse Spring	CP-1192	2
7-47	ML568102	Reverse Lever (3)	CP-1029	1
7-48	ML568563	Rec. Slider Lever, w/prop	CP-1074	1
7-49	ML566548	Rec. Prevention Lever (1), w/pin	CP-1125	1
7-50	UM568394	Rec. Prevention Slide	CP-1057	1
7-51	UM566381	Sw. Slide, w/prop	CP-1107	1
7-52	ML608027	Changing Slide Lever I-C, w/pin	CP-1026	1
7-53	ML568078	Changing Slide Lever 1-B, w/pin	CP-1026	1
7-54	UM568080	Changing Slide (2)	CP-1027	1
7-55	ML566245	Changing Slide Lever (2), w/pin	CP-1086	1
7-56	UM566278	Changing Slide (3), w/pin	CP-1091	1
7-57	UM568192	Rec. Plate	CP-1038	1
7-58	ML568618	Drive Lever (2), w/pin	CP-1083	1
7-59	ML566302	Drive Lever (3), w/prop	CP-1095	1
7-60	UM566223	Drive Slide, w/pin	CP-1084	1
7-61	ZG232121	Tension Lefer Spring	MH-143	1
7-62	ZG227452	Spring D	900-118	1
7-63	UM566471	Rec. Stopper	CP-1118	1
7-64	ZS325495	Tapping Screw #2 3x6		21
7-65	UM568203	Plunger Bracket	CP-1039	1
7-66	EP565165	Plunger Solenoid 0730THT12	44-1-63	1
7-67	ZS371867	Screw, binding head 2.6x4		2
7-68	UM568528	Plunger Plate	CP-1070	1
7-69	ZS413728	Screw, binding head 3x6, w/washer		1
7-70x	MB606082	Rubber, Plunger Vibrate Prevention	CP-1199	1
7-71	ML568517	Drive Lever (1)	CP-1069	1
7-72	ZG566752	Plunger Spring A	CP-1158	1
7-73	ZG566943	Head Base Spring	CP-1160	1
7-74	ZW571757	Washer D8.1x13x0.5t		1
7-75	ZW270156	'E' Ring 6M	6-1-9	1
7-76	ML566368	Rew Lever, w/pin	CP-1104	1
7-77	UM566425	Rew Stop Slide	CP-1112	1
7-78	ML568462	Wind Lever (1), w/shaft	CP-1064	1
7-79	UM568361	Wheel Collar	CP-1054	1
7-80	MI566550	Wind Wheel (1)	CP-1126	1
7-81x	MT387617	Clutch Felt	CS-2011	1
7-82	MI566561	Wind Wheel (2)	CP-1127	1
7-83	ZG578788	Clutch Spring	CP-1178	1
7-84	UM365670	Spring Holder	RCC-1371	1
7-85	ZG577923	Rec. Spring (1)	CP-1172	1
7-86	UM568247	Spring Hook	CP-1042	1
7-87	ZW391397	'E' Ring 1.2M	6-1-9	1
7-88	ML568350	FF Lever	CP-1052	1
7-89	ZW270134	'E' Ring 5M	6-1-9	3
7-90	ZG308970	Mode Spring	RC-587	2
7-91	ZG566605	Wind Spring (2)	CP-1132	2
7-92	ML568348	Rewind Lever	CP-1051	1
7-93	MB566583	Wind Belt	CP-1129	1
7-94	ML568664	Take-up Lever (1), w/shaft	CP-2004	2
7-95	ZG469315	Take-up Lever Spring	CG-1091	2
7-96	MI566651	Capstan Idler, w/metal	CP-1140	1
7-97	ZW591816	Washer D3.1x7x0.3t		1
7-98	ZW474963	Washer D3.1x7x0.5t		1
7-99x	ZW474581	Washer (Teflon) D2.05x3.5x0.2t		2
7-100	ZW357164	'E' Ring 2.3M	6-1-9	1
7-101	MB566684	Capstan Belt	CP-1144	1
7-102	BF566796	Flywheel A, w/shaft	CP-1180	1
7-103	BF566807	Flywheel B, w/shaft	CP-1141	1
7-104	UM566673	Flywheel Supporting Plate	CP-1143	1
7-105	UM566662	Flywheel Support	CP-1142	2
7-106	ZW245981	Push Nut D4		2
7-107	UM563438	Sw. Table B	CP-1061	1
7-108	ES539043	Push Sw. SPJ-10108	25-5-92	2
7-109	SB499195	Sw. Button	CG-3305	2
7-110x	ZS460440	Screw, pan head 2x4		4
7-111	UM568293	Pause Bracket	CP-1047	1
7-112	MS568495	Pause Shaft	CP-1067	1
7-113	ML568168	Pause Lever (1)	CP-1035	1
7-114x	ZG615936	Pause Spring	CP-2200	2
7-115	UM568170	Pause Sw. Table	CP-1036	1
7-116	ES517410	Push Sw. SPJ-10101	25-5-76	1
7-117x	ZS355544	Screw, binding head 2x4		2
7-118	UM568304	Rec. Bracket	CP-1048	1
7-119	MS568337	Sw. Lever Shaft	CP-1053	1
7-120	ML568405	Rec. Sw. Lever	CP-1058	1
7-121	ML568416	Changing Sw. Lever	CP-1059	1
7-122	ZG568427	Changing Sw, Lever Spring	CP-1060	1
7-123	ZS356668	Screw, binding head 2.3x4		2
7-124	UM568326	Frame Bracket (2)	CP-1050	1
7-125	UM568315	Frame Bracket (1)	CP-1049	1
7-126	UM566695	P.C. Board Mt. Foot	CP-1145	1
7-127	EC589555	MP/C. 6+1μF 150WV AC (Lug type Uni/D.)	24-9-87	1
7-128	UM578801	Shield Plate	CP-1185	1
7-129x	ZW273881	Earth Lug M4		1
7-130	ZG566932	Plunger Spring B	CP-1159	1

When ordering parts, please describe Parts Number, Serial Number, and Model Number in detail.

FIG. 8 PHOTO OF PRE-AMP. P.C. BOARD (CP-5002) BLOCK



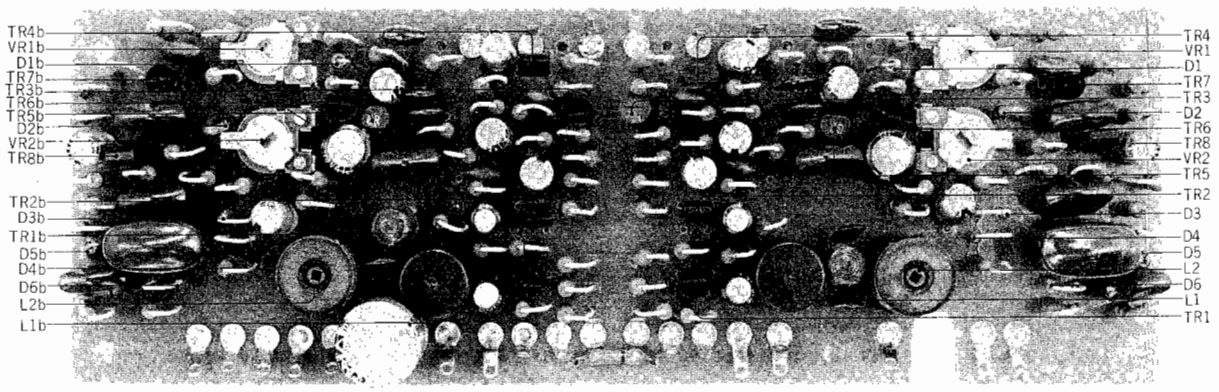
PRE-AMP. P.C. BOARD (CP-5002) BLOCK

Symbol No.	Parts No.	Description	Q'ty
8-1x	BA572073	Pre-Amp. P.C. Board Block Comp. (CP-5002)	1
8-TR1	ET391768	Transistor 2SC458LG(C)(D)	2
8-TR2,3	ET601323	Transistor 2SC1648(S)(E)(U)	4
8-TR4to8	ET520841	Transistor 2SC711(E)(F)(G)	10
8-D1, 2	ED219464	Germanium Diode 1N34A	4
8-D3to8	ED560913	Silicon Diode 1S2473 VE	12
8-T1	BT517274	Headphone Trans. N16-535S	2
8-L1	EO368403	Ferri Inductor FL9H33MH(J)	2
8-L2	EO590552	Inductor FS1215S 33MH(J)	2
8-L3	EO243988	Ferri Inductor FL7H 3.3MH(J)	2
8-L4,5	EO368403	Ferri Inductor FL9H 33MH(J)	4
8-VR1	EV511255	Semi-fixed/Vol. V10K8-1-5 500Ω B	2
8-VR2	EV554668	Semi-fixed/Vol. V10K8-1-5 20 KB	2
8-SW1	ES494076	Slide SW. CL-109B	1
8-SW2	ES494302	Slide SW. CL-104B	1
8-SW3	ES494076	Slide Sw. CL-109B	1
8-2	UM567742	Connecting Prop	1
8-3	ZS323728	Screw, binding head 3x5	1
8-4	UM567753	Connecting Lever	1
8-5	ZW270088	'E' Ring 1.9M	1
8-6	ZW492816	Screw, binding head 2x6	1
8-7	ZW317171	Washer (PBP) D3.1x8x0.1t	1
		Capacitor, Vertical Type	
8-C1	EC432810	Elect. 10μF 16WV NL	2
8-C2	EC565830	Styrol 200PF(J) 50WV	2
8-C3	EC220127	Elect. 100μF 16WV	2
8-C4	EC516767	Styrol 470PF(K) 50WV	2
8-C5	EC329771	Elect. 47μF 6.3WV	2
8-C6	EC456322	VFM 22PF(K) 50WV	2
8-C7	EC389485	Mylar 0.018μF(J) 50WV	2
8-C8	EC250716	Mylar 0.0022μF(K) 50WV	2
8-C9,10	EC320051	Elect. 10μF 16WV	4
8-C11	EC389485	Mylar 0.018μF(J) 50WV	2
8-C12	EC250716	Mylar 0.0022μF(K) 50WV	2
8-C13	EC320051	Elect. 10μF 16WV	2
8-C14	EC565830	Styrol 200PF(J) 50WV	2
8-C15	EC329771	Elect. 47μF 6.3WV	2
8-C16	EC394918	VFM 33PF(K) 50WV	2
8-C17	EC220364	Elect. 100μF 6.3WV	2
8-C18	EC565830	Styrol 200PF(J) 50WV	2
8-C19,20,21	EC320051	Elect. 10μF 16WV	6
8-C22	EC329771	Elect. 47μF 6.3WV	2
8-C23	EC450055	Elect. 1μF 25WV	2
8-C24	EC391004	Mylar 0.0033μF(J) 50WV	2
8-C25	EC487157	NP 0.47μF(M) 50WV	2
8-C26	EC320051	Elect. 10μF 16WV	2
8-C27	EC450527	Elect. 4.7μF 25WV	2
8-C28	EC379157	Mylar 0.033μF(J) 50WV	2
8-C29,30	EC565830	Styrol 200PF(J) 50WV	4
8-C31	EC487157	NP 0.47μF(M) 50WV	2
8-C32	EC362125	Mylar 0.0056μF(K) 50WV	2
		Resistor, Stopper Type	
8-R1	ER212883	Carbon RD1/4 4.7k(J)	2
8-R2	ER361528	Carbon RD1/4 56k(J)	2
8-R3	ER304290	Carbon RD1/4 10(J)	2
8-R4	ER357579	Carbon RD1/4 150k(J)	2
8-R5	ER465276	Carbon RD1/4 270k(J) NL	2
8-R6	ER336442	Carbon RD1/4 10k(J)	2
8-R7	ER306843	Carbon RD1/4 1.2k(J)	2
8-R8	ER212264	Carbon RD1/4 22k(J)	2
8-R9	ER212883	Carbon RD1/4 4.7k(J)	2
8-R10	ER343078	Carbon RD1/4 2.7k(J)	2
8-R11	ER450011	Carbon RD1/4 120k(J)	2
8-R12	ER212883	Carbon RD1/4 4.7k(J)	2
8-R13	ER212174	Carbon RD1/4 180k(J)	2
8-R14	ER352045	Carbon RD1/4 3.9k(J)	2
8-R15	ER212264	Carbon RD1/4 22k(J)	2
8-R16	ER336442	Carbon RD1/4 10k(J)	2
8-R17	ER212883	Carbon RD1/4 4.7k(J)	2
8-R18	ER306887	Carbon RD1/4 15k(J)	2
8-R19	ER347073	Carbon RD1/4 200(J)	2
8-R20	ER357491	Carbon RD1/4 82k(J)	2
8-R21,22	ER306887	Carbon RD1/4 15k(J)	4
8-R23	ER211757	Carbon RD1/4 100k(J)	2
8-R24	ER342933	Carbon RD1/4 27k(J)	2
8-R25	ER362441	Carbon RD1/4 1.8k(J)	2
8-R26	ER213300	Carbon RD1/4 680(J)	2
8-R27	ER565356	Carbon RD1/4 0.5(J)	1
8-R28	ER617196	Carbon RD1/4 1k(J) (Insu. Type)	2
8-R29	ER211465	Carbon RD1/4 1k(J)	2
8-R30	ER420322	Carbon RD1/4 36k(J)	2
8-R31	ER211757	Carbon RD1/4 100k(J)	2
8-R32	ER212883	Carbon RD1/4 4.7k(J)	2
8-R33	ER324720	Carbon RD1/4 5.6k(J)	2
8-R34	ER211320	Carbon RD1/4 1.5k(J)	2
8-R35	ER395460	Carbon RD1/4 1.3k(J)	2
8-R36	ER211757	Carbon RD1/4 100k(J)	2

When ordering parts, please describe Parts Number, Serial Number, and Model Number in detail.

Symbol No.	Parts No.	Description	Q'ty
8-R37	ER617218	Carbon RD1/4 5.6k(J) (Insu. Type)	2
8-R38	ER212883	Carbon RD1/4 4.7k(J)	2
8-R39	ER343078	Carbon RD1/4 2.7k(J)	2
8-R40	ER211757	Carbon RD1/4 100k(J)	2
8-R41	ER306360	Carbon RD1/4 6.8k(J)	2
8-R42	ER306887	Carbon RD1/4 15k(J)	2
8-R43	ER211465	Carbon RD1/4 1k(J)	2
8-R44	ER343078	Carbon RD1/4 2.7k(J)	2
8-R45	ER304290	Carbon RD1/4 10(J)	2

FIG. 9 PHOTO OF DOLBY P.C. BOARD (CP-5003) BLOCK



DOLBY P.C. BOARD (CP-5003) BLOCK

Symbol No.	Parts No.	Description	Q'ty
9-1x	BA572084	Dolby P.C. Board Block Comp. (CP-5003)	1
9-TR1, 2	ET601312	Transistor 2SC1647(S)(E)(U)	4
9-TR3	ET517263	Transistor 2SC1312(G)(H)	2
9-TR4	ET520841	Transistor 2SC711(E)(F)(G)	2
9-TR5	ET491051	FET 2SK30A (GR)	2
9-TR6	ET517263	Transistor 2SC1312(G)(H)	2
9-TR7	ET557976	Transistor 2SA628(E)(F)	2
9-TR8	ET520841	Transistor 2SC711(E)(F)(G)	2
9-D1	ED219464	Germanium Diode 1N34A	2
9-D2	ED491130	Zener Diode WZ-085	2
9-D3, 4	ED514721	Silicon Diode WG-599	4
9-D5	ED219464	Germanium Diode 1N34A	2
9-D6	ED514721	Silicon Diode WG-599	2
9-VR1	EV499364	Semi-fixed/Vol. V10K8-4-2 5 kB	2
9-VR2	EV499375	Semi-fixed/Vol. V10K8-4-2 500ΩB	2
9-L1	EO496350	Inductor 146LY 36MH(J)	2
9-L2	EO496361	Inductor 6070GE 23MH(J)	2
		Capacitor, Vertical Type	
9-C1	EC320051	Elect. 10μF 16WV	2
9-C2	EC495865	Styrol 300PF(J) 50WV	2
9-C3	EC379787	Mylar 0.0039μF(J) 50WV	2
9-C4	EC450055	Elect 1μF 25WV	2
9-C5	EC250683	Mylar 0.0022μF(J) 50WV	2
9-C6, 7, 8	EC320051	Elect. 10μF 16WV	6
9-C9	EC321208	Elect. 220μF 16WV	1
9-C10	EC456322	VFM 22PF(K) 50WV	2
9-C11	EC329883	Mylar 0.0056μF(J) 50WV	2
9-C12	EC337500	Mylar 0.0047μF(J) 50WV	2
9-C13	EC329861	Mylar 0.027μF(J) 50WV	2
9-C14	EC320051	Elect. 10μF 16WV	2
9-C15	EC251291	Mylar 0.1μF(K) 50WV	2
9-C16	EC320040	Elelct. 47μF 16WV	2
9-C17	EC320051	Elect. 10μF 16WV	2
9-C18	EC251291	Mylar 0.1μF(K) 50WV	2
9-C19	EC320051	Elect. 10μF 16WV	2
9-C20, 21	EC251291	Mylar 0.1μF(K) 50WV	4
9-C22	EC395504	Mylar 0.33μF(K) 50WV	2
9-C23	EC290531	VFM 100PF(K) 50WV	2
9-C24	EC357827	VFM 50PF(K) 50WV	2

Symbol No.	Parts No.	Description	Q'ty
		Resistor, Stopper Type	
9-R1	ER336442	Carbon RD1/4 10k(J)	2
9-R2	ER212477	Carbon RD1/4 3.3k(J)	2
9-R3	ER379631	Carbon RD1/4 300k(J)	2
9-R4	ER346601	Carbon RD1/4 47k(J)	2
9-R5	ER212477	Carbon RD1/4 3.3k(J)	2
9-R6	ER304402	Carbon RD1/4 470(J)	2
9-R7	ER211858	Carbon RD1/4 12k(J)	2
9-R8	ER211667	Carbon RD1/4 100(J)	2
9-R9	ER211858	Carbon RD1/4 12k(J)	2
9-R10	ER357456	Carbon RD1/4 2.2k(J)	2
9-R11	ER349907	Carbon RD1/4 33k(J)	2
9-R12	ER357570	Carbon RD1/4 150k(J)	2
9-R13	ER212174	Carbon RD1/4 180k(J)	2
9-R14	ER336442	Carbon RD1/4 10k(J)	2
9-R15	ER212264	Carbon RD1/4 22k(J)	2
9-R16	ER357570	Carbon RD1/4 150k(J)	2
9-R17	ER349942	Carbon RD1/4 8.2k(J)	2
9-R18	ER371946	Carbon RD1/4 2k(J)	2
9-R19	ER349907	Carbon RD1/4 33k(J)	2
9-R20	ER430301	Carbon RD1/4 820(J)	1
9-R22	ER349907	Carbon RD1/4 33k(J)	2
9-R23	ER357535	Carbon RD1/4 39k(J)	2
9-R24	ER212477	Carbon RD1/4 3.3k(J)	2
9-R25	ER357456	Carbon RD1/4 2.2k(J)	2
9-R26	ER349942	Carbon RD1/4 8.2k(J)	2
9-R27	ER306843	Carbon RD1/4 1.2k(J)	2
9-R28	ER430097	Carbon RD1/4 680k(J)	2
9-R29	ER306887	Carbon RD1/4 15k(J)	2
9-R30	ER349942	Carbon RD1/4 8.2k(J)	2
9-R31	ER336442	Carbon RD1/4 10k(J)	2
9-R32	ER306887	Carbon RD1/4 15k(J)	2
9-R33	ER349942	Carbon RD1/4 8.2k(J)	2
9-R34	ER349907	Carbon RD1/4 33k(J)	2
9-R35	ER361528	Carbon RD1/4 56k(J)	2
9-R36	ER346994	Carbon RD1/4 18k(J)	2
9-R37	ER343078	Carbon RD1/4 2.7k(J)	2
9-R38	ER211465	Carbon RD1/4 1k(J)	2
9-R39	ER380913	Carbon RD1/4 33(J)	2
9-R40	ER361642	Carbon RD1/4 47(J)	2
9-R41	ER306887	Carbon RD1/4 15k(J)	2
9-R42,43	ER426857	Carbon RD1/4 270k(J)	4
9-R44	ER380711	Carbon RD1/4 220k(J)	2

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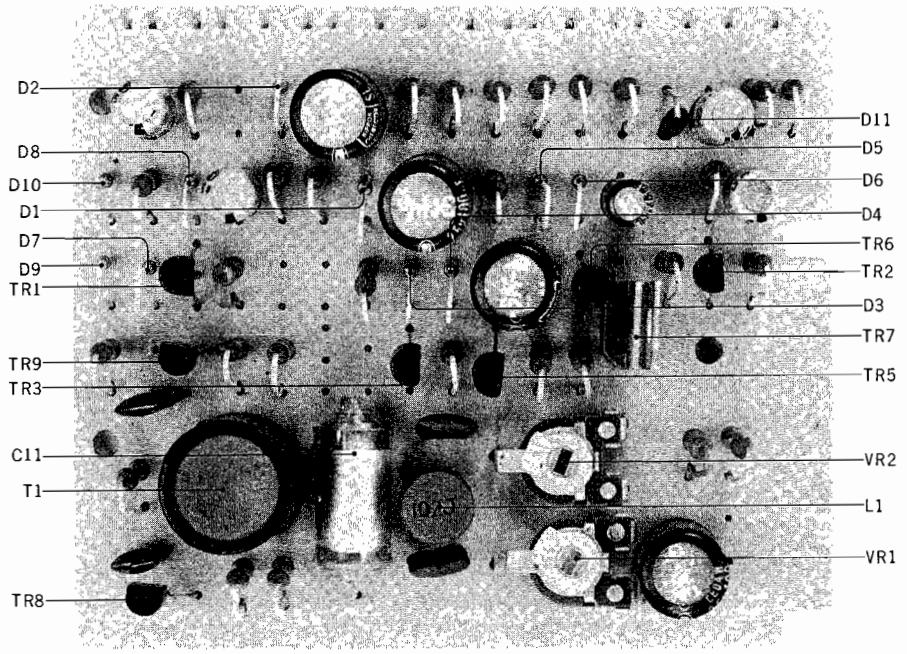
FIG. 10 PHOTO OF SYS. CON./OSC. P.C. BOARD (CP-2002) BLOCK

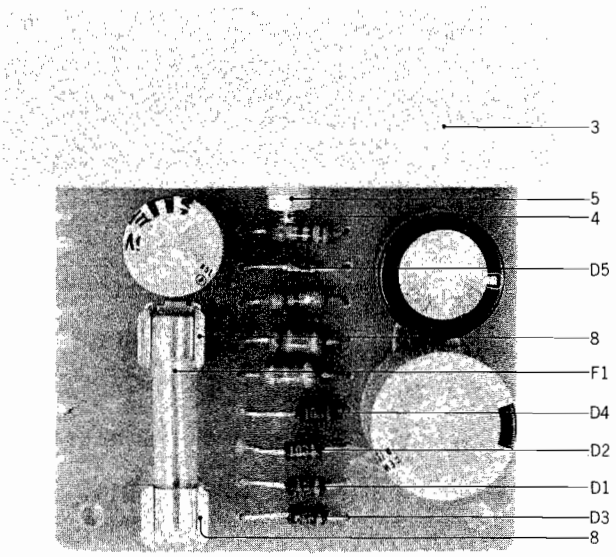


SYS. CON./OSC. P.C. BOARD (CP-2002) BLOCK

Symbol No.	Parts No.	Description	Q'ty
10-1x	BA572005	Sys. Con./Osc. P.C. Board Block Comp. (CP-2002)	1
10-TR1,2,3,	ET398777	Transistor 2SC711(G)(F)	3
10-TR5, 6	ET398777	Transistor 2SC711(G)(F)	2
10-TR7	ET537300	Transistor 2SD361(D)(E)	1
10-TR8, 9	ET511694	Transistor 2SC1211(D)(E)	2
10-D1 to 10	ED560913	Silicon Diode 1S2473 VE	10
10-D11	ED494583	Silicon Diode 10D05	1
10-L1	EO443722	Ferri Inductor FL9H 1MH(J)	1
10-T1	EO570227	Osc. Coil OT-915	1
10-VR1, 2	EV571803	Semi-fixed/Vol. V10K8-4-2 500 kB	2
		Capacitor, Vertical Type	
10-C1	EC220151	Elect. 100μF 25WV	1
10-C2	EC336126	Elect. 47μF 25WV	1
10-C3, 4	EC450527	Elect. 4.7μF 25WV	2
10-C5	EC220151	Elect. 100μF 25WV	1
10-C6	EC539943	Elect. 3.3μF 50WV	1
10-C7, 8	EC220994	Elect. 10μF 25WV	2
10-C9, 10	EC290520	VFM 100PF(J) 50WV	2
10-C11	EC556536	Styrol 5600PF(J) 250WV	1
10-C12,13	EC250841	Mylar 0.01μF(J) 50WV	2
10-C14	EC220151	Elect. 100μF 25WV	1

Symbol No.	Parts No.	Description	Q'ty
		Resistor, Stopper Type	
10-R2	ER213300	Carbon RD1/4 680(J)	1
10-R3, 4	ER211757	Carbon RD1/4 100k(J)	2
10-R5	ER336442	Carbon RD1/4 10k(J)	1
10-R6	ER212883	Carbon RD1/4 4.7k(J)	1
10-R7	ER304402	Carbon RD1/4 470(J)	1
10-R8	ER336442	Carbon RD1/4 10k(J)	1
10-R10	ER343078	Carbon RD1/4 2.7k(J)	1
10-R11	ER346601	Carbon RD1/4 47k(J)	1
10-R12	ER211757	Carbon RD1/4 100k(J)	1
10-R13	ER211465	Carbon RD1/4 1k(J)	1
10-R14	ER212883	Carbon RD1/4 4.7k(J)	1
10-R15, 16	ER212264	Carbon RD1/4 22k(J)	2
10-R18	ER336442	Carbon RD1/4 10k(J)	1
10-R19	ER211757	Carbon RD1/4 100k(J)	1
10-R20	ER336442	Carbon RD1/4 10k(J)	1
10-R21	ER211757	Carbon RD1/4 100k(J)	1
10-R22	ER336442	Carbon RD1/4 10k(J)	1
10-R23	ER211757	Carbon RD1/4 100k(J)	1
10-R26	ER212264	Carbon RD1/4 22k(J)	1
10-R27	ER211465	Carbon RD1/4 1k(J)	1
10-R28	ER433877	Carbon RD1/4 120(J)	1
10-R29	ER304290	Carbon RD1/4 10(J)	1
10-R30, 31	ER315944	Carbon RD1/4 3.3(J)	2
10-R32	ER304402	Carbon RD1/4 470(J)	1
10-R33	ER212883	Carbon RD1/4 4.7k(J)	1

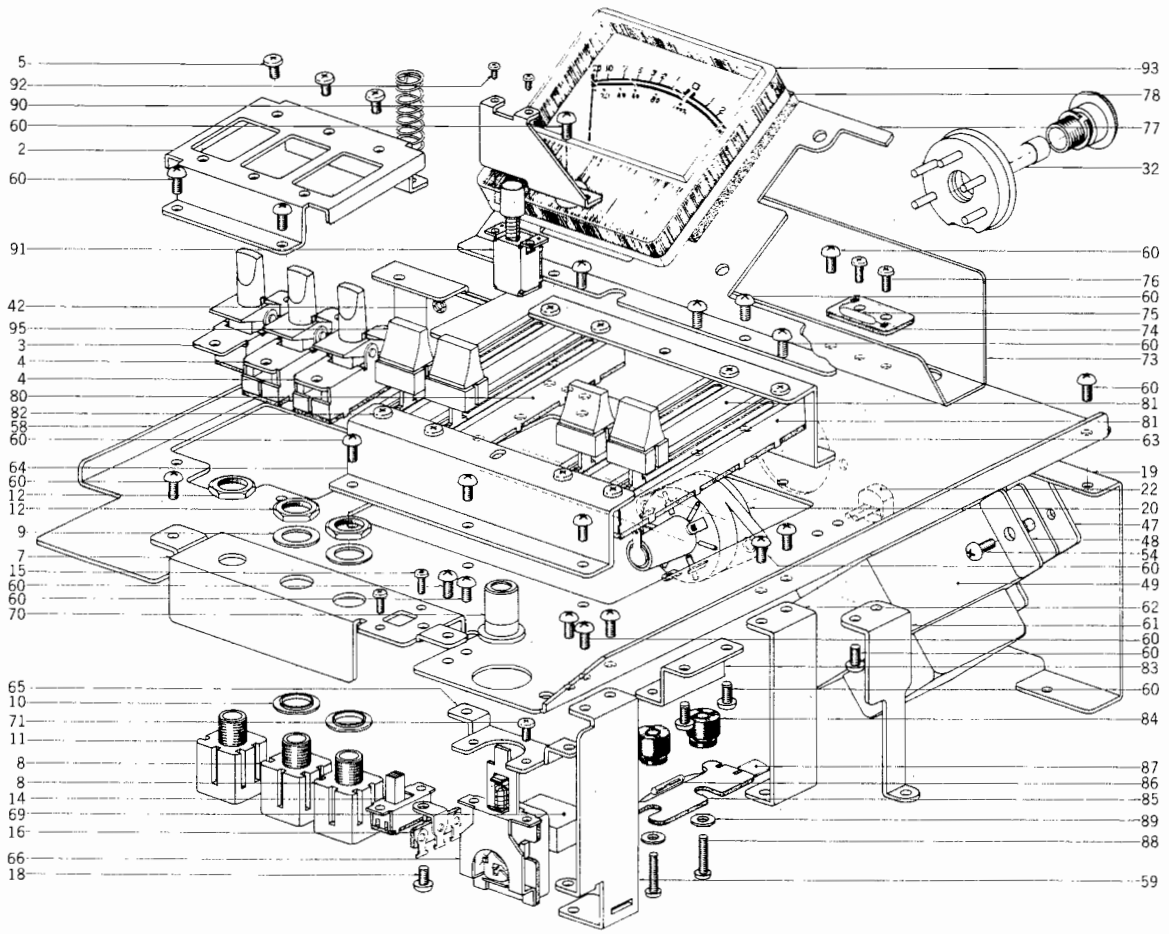
FIG. 11 PHOTO OF POWER SUPPLY P.C. BOARD (CP-5001) BLOCK



POWER SUPPLY P.C. BOARD (CP-5001) BLOCK

Symbol No.	Parts No.	Description	Q'ty
11-1x	BA572062	Power Supply P.C. Board Block Comp. (CP-5001)	1
11-2x	BA591434	Power Supply P.C. Board Block Comp. (CP-5001)(CEE,CSA,JPN)	1
11-TR1	ET537300	Transistor 2SD361(D)(E)	1
11-D1 to 4	ED494583	Silicon Diode 10D05	4
11-D5	ED557111	Zener Diode WZ-210	1
11-F1	EF563692	Fuse 1.5A 250V	1
11-FR1	ER565828	Fuse/R. FRN1/4 10ΩK 700MA (CEE,CSA,JPN)	1
11-FR2	ER574841	Fuse/R. FRN1/2 4.7ΩK 250MA (CEE,CSA,JPN)	1
11-3	EZ567731	Power Supply Heat-sink Plate	1
11-4	ZS321298	ISO Screw, binding head 3x8	1
11-5	ZW273756	Nut M3	1
11-6	ZS325495	Tapping Screw #2 3x6	2
11-7	ZW273802	Toothed Lock Washer M3	1
11-8	EJ514822	Fuse Holder, P.C. Board S-N5051	2
		Capacitor, Vertical Type	
11-C1	EC565345	Elect. 1000μF 50WV	1
11-C2	EC336115	Elect. 220μF 25WV	1
11-C3	EC450270	Elect. 1000μF 25WV	1
		Resistor, Insulator Type	
11-R1	ER536984	Carbon RD1/2 4.7(J)	1
11-R2	ER565323	Carbon RD1/2 1.3k(J)	1
11-R3	ER617152	Carbon RD1/4 47(J)	1
11-R4	ER617174	Carbon RD1/4 10(J)	1

FIG. 12 ILLUSTRATION OF AMP. ASSEMBLY BLOCK



AMP. ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
	SWITCH BASE BLOCK			
12-1x	BS572038	Switch Base Block Comp.	CP	1
12-2	UM567718	SW. Base	CP-5010	1
12-3	ES565255	Lever SW. 12T-3S040 (Lead Type)	25-12-11	1
12-4	ES565266	Lever SW. S-J6399 (Lead Type)	25-12-10	2
12-5	ZS323728	ISO Screw, binding head 3x5		6
	MIC. JACK BLOCK			
12-6x	BJ572051	Mic' Jack Block Comp.	CP	1
12-7	UM567720	Jack Mt. Plate	CP-5014	1
12-8	EJ315281	Mic. Jack 2PMJ1	31-2-19	1
12-9	EZ225101	Jack Fiber D9.1x15.4x0.5t	DX-510	2
12-10	EZ469721	Nylon Collar B, Jack	2-4-27	2
12-11	EJ376604	Mic. Jack 3PMJ1	31-2-17	1
12-12	ZW554624	E Jack Nut	7-1-56	3
12-13x	ER214290	Carbon/R. RD1/4 4.7k(J) (Insu. Type)	35-9-5	2
12-14	ES484154	Slide SW. U/L 6P (small) SJ-0282	25-3-36	1
12-15	ZS393197	Screw, binding head 2x6		2
12-16	EJ255093	Lug Plate VB1L1	33-4-1	1
12-17x	ER565301	Carbon/R. RD1/4 180k(J) (Insu. type)	35-9-5	2
12-18	ZS455207	Tapping Screw #2 3x5 (BR)		1
	JACK PLATE BLOCK			
12-19	UM567540	Jack Plate Bracket	CP-5005	1
12-20	EJ233370	Socket (Volt. Selector) S-18010 (3 core, WG)	40-2-3	1
12-21x	ZS201183	Screw, truss head 3x8 (Black)		2
12-22	EZ382263	Strain Relief SR-4K-4	2-7-12	1
12-23x	EZ246936	Strain Relief SR-6W-1 (WG, 3 core)	2-7-8	1
12-24x	EW540112	AC Core 2.5M (CUL)	26-3-19	1
12-25x	EW315448	Australia Cord (3 core)	26-3-11	1
12-26x	EW496855	Power Core VM-0099 (CEE)	26-3-27	1
12-27x	EW524845	AC Cord 2.5M (JPN)	26-3-31	1
12-28x	EW486797	Power Supply Cord (VDE)	26-3-26	1
12-29	EA610470	Fuse P.C. Board (CSA, JPN)	CP-5036	1
12-30x	EZ607680	Fuse Angle (CSA, JPN)	CP-5039	1
12-31x	EJ514822	Fuse Holder, P.C. Board S-N5051 (CSA,JPN)	40-1-28	6
12-32	EF563681	Fuse 1A 250V	39-1-50	1
12-33x	EF563703	Fuse 2A 250V (JPN)	39-1-50	1
12-34x	EF513663	Fuse (T Type) 800 MAT (CEE)		2
12-35x	EF354295	Fuse (T Type) 1.6 AT (CEE)		1
12-36x	EZ586574	EC Fuse Holder E (CEE)	A0392	1
12-37x	EZ586506	Trans. Base CP (CEE,CSA)	CP-1193	1
12-38x	EF277402	Fuse ST-2 1A (CSA)	39-1-26	1
12-39x	EF277413	Fuse ST-2 2A (CSA)	39-1-26	1
12-40x	EF338387	Fuse ST-2 1.5A (CSA)	39-1-26	1
12-41x	EF563692	Fuse 1.5A 250V (JPN)	39-1-50	1
12-42	EJ565277	Jack Plate J	31-5-84	1
12-43x	ES379045	Slide SW. 6P (small) SJ-0282	25-3-36	1
12-44x	EJ558246	5P Din Jack	31-1-99	1
12-45x	ER440921	Carbon/R. RD1/4 27k(J) (Insu. Type)	35-9-5	2
12-46x	ER529975	Carbon/R. RD1/4 430k(J) (Insu. Type)	35-9-5	2
12-47	EZ567505	Trans. Base	CP-5022	1
12-48	EZ486617	Trans. Reinforcement Plate B	LF-5222	2
12-49	BT565288	Power Trans. CPT-10	38-4-234	1
12-50x	BT591232	Power Trans. CPT-12 (CEE)	38-4-289	1
12-51x	BT591221	Power Trans. CPT-11 (CSA)	38-4-288	1
12-52x	BT591491	Power Trans. CPT-13 (JPN)	38-4-290	1
12-53x	ZS494842	Tapping Screw #2 3x8 (bind), w/washer		1
12-54	ZS447840	Tapping Screw #2 3x8 (BR)		1
12-55x	SM586517	Jack Name Plate A (CEE)	CP-1194	1
12-56x	SM586528	Jack Name Plate B (CSA)	CP-1194	1
12-57x	SM586530	Jack Name Plate C (JPN)	CP-1194	1

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
	AMP. CHASSIS BLOCK			
12-58	UM567538	Amp. Chassis	CP-5004	1
12-59	UM567393	Chassis Bracket	CP-5007	1
12-60	ZS325495	Tapping Screw #2 3x6		23
12-61	UM566965	P.C. Board Stop Plate (2)	CP-5027	1
12-62	UM567382	P.C. Board Stop Plate	CP-5006	1
12-63	UM567707	Volume Base A	CP-5008	1
12-64	UM567404	Volume Base B	CP-5009	1
12-65	UM567415	Power SW. Plate	CP-5011	1
12-66	ES246025	Push SW. SDF1PBP1 (UEH-12BP U/L)	25-5-11	1
12-67x	ES499972	Push SW. JS-09 (CEE)	25-5-67	1
12-68x	ES499972	Push SW. JS-09 (WG)	25-5-67	1
12-69	ER376413	Spark Quencher U/L 0.033μ+120Ω 500WV	41-1-37	1
12-70	SK567472	Knob 2	CP-5019	1
12-71	ZS379405	ISO Screw, binding head 3x6		3
12-72x	ZW273881	Earth Lug M4 (CEE)		1
12-73	UM567448	Lamp Reflect Plate	CP-5015	1
12-74	EA457176	Lamp P.C. Board	CG-5003	2
12-75	EL295312	Lamp (No. 2) 8V 0.2A	28-2-8	2
12-76	ZS464692	Screw, binding head 2.3x6		4
12-77	UM567494	Meter Base	CP-5021	1
12-78	MB567437	Meter Cushion	CP-5013	2
12-79x	MB576540	Side Cushion	CP-6037	2
12-80	EV453396	Slide Vol. LD14A003 50 kA (L=20M/M)	36-16-3	2
12-81	EV494436	Slide Vol. LD14A003 10 kA	36-16-6	2
12-82	ZS417137	Screw, binding head 3x4		8
12-83	UM566482	Read SW. Table	CP-1119	1
12-84	MB515518	SW. Table Cushion, w/sleeve	CG-1228	2
12-85	EA516047	Read SW. P.C. Board	CG-1229	1
12-86	ES516036	Read SW. ORD-225	25-11-1	1
12-87	EC329850	VFM/C. 220PF(J) 50WV	24-6-2	1
12-88	ZS462881	Screw, binding head 2.3x12		2
12-89	ZW550697	Washer (SPC) D2.9x7.5x0.5t		2
12-90	UM567450	Memory SW. Base	CP-5016	1
12-91	ES565233	Push SW. SPJ-10208	25-5-112	1
12-92	ZS464703	Screw, binding head 2x4		2
12-93	EM565244	VU Meter KL-250B-26	46-1-83	2
12-94x	EJ510333	Wire Clip 220-JD481610-0104 (Nylon)	2-7-17	4
12-95	SK569237	Slide Knob	CP-6024	4

When ordering parts, please describe Parts Number, Serial Number, and Model Number in detail.

FIG. 13 (a) FINAL ASSEMBLY BLOCK

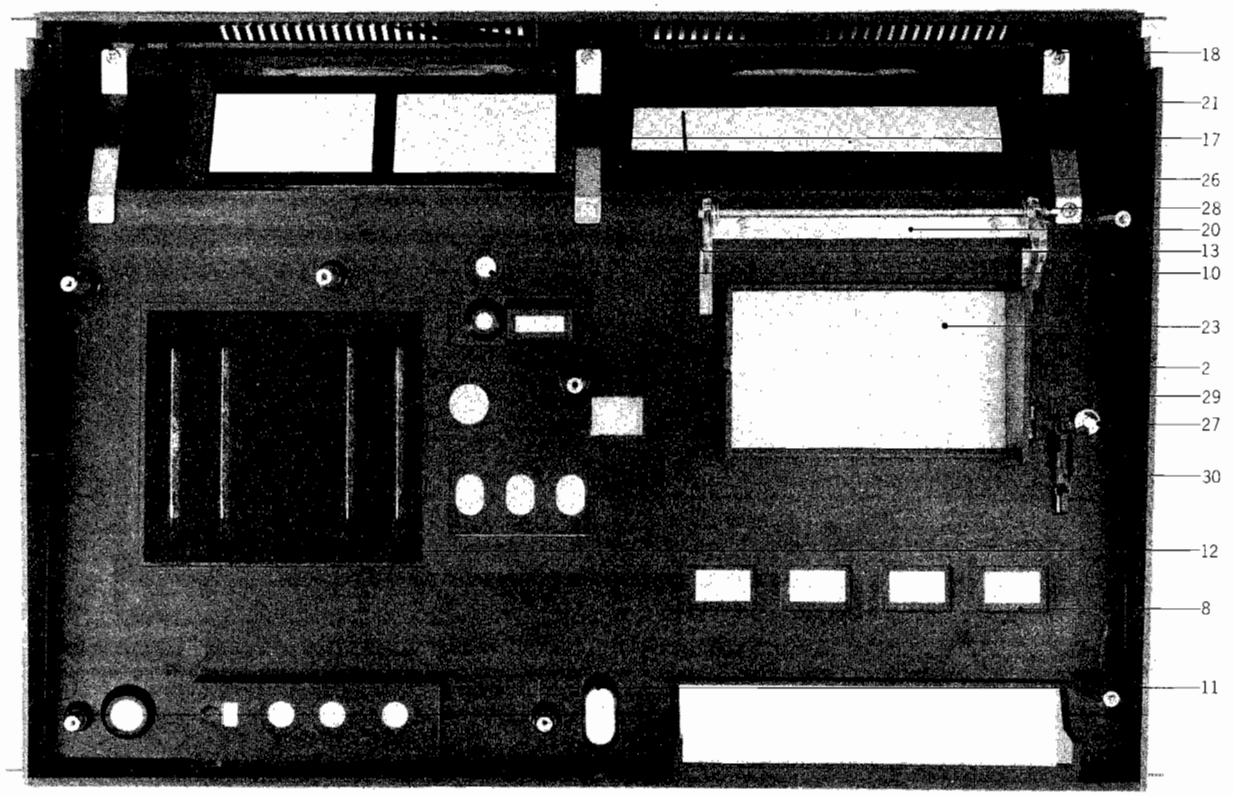
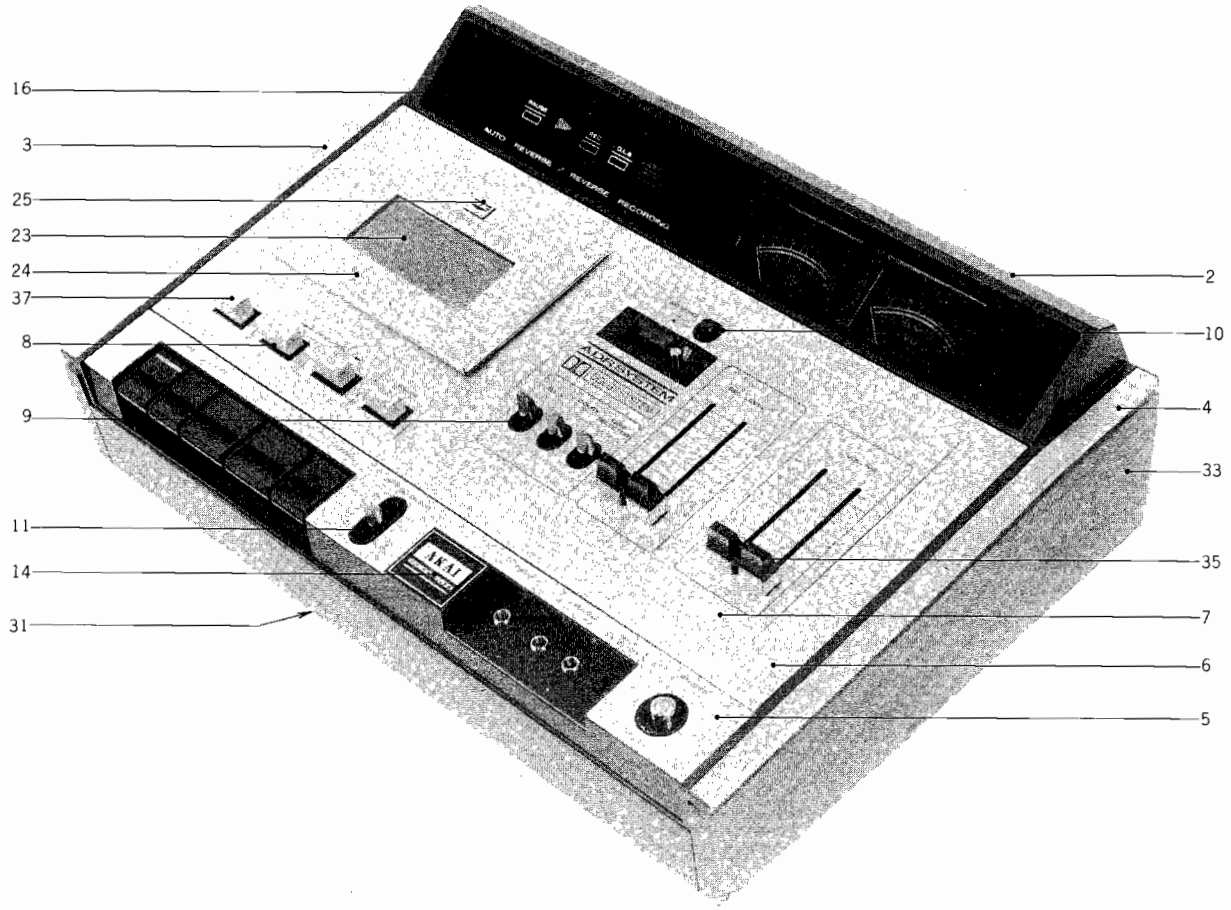


FIG. 13 (b) FINAL ASSEMBLY BLOCK



FINAL ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
	UPPER CASE BLOCK			
13-1x	BC571871	Upper Case Block Comp.	CP	1
13-2	BC569103	Upper Case	CP-6003	1
13-3	SE569068	Sash (1) Left	CP-6011	1
13-4	SE569070	Sash (2) Right	CP-6011	1
13-5	SP569081	Case Panel (1)	CP-6007	1
13-6	SP569891	Case Panel (2)	CP-6005	1
13-7	SP569283	Case Panel (3)	CP-6009	1
13-8	UM569013	Direction Collar	CP-6023	4
13-9	UM568980	Switch Collor	CP-6020	1
13-10	UM568991	Memory SW. Escutchion	CP-6021	1
13-11	UM569002	Mode Selector Escutchion	CP-6022	1
13-12	UM569226	Volume Mask	CP-6016	1
13-13	UM495123	Buffer Rubber	CG-6304	2
13-14	SM568653	Model Name Plate	CP-6019	1
13-15x	ZG577934	Earth Spring	CP-1170	1
13-16	UM567764	Case Glass	CP-6017	1
13-17	UM576540	Side Cushion	CP-6037	2
13-18	ZS323728	Screw, binding head 3x5		8
13-19x	UM577427	Case Glass Mat	CP-6036	2
13-20	UM568967	Lid Bracket	CP-6015	1
13-21	MZ568978	Glass Retainer A	CP-6018	1
13-22x	MZ598645	Glass Retainer B	CP-6018	1
13-23	UM569294	Case Lid	CP-6012	1
13-24	SP569305	Lid Panel	CP-6013	1
13-25	SM518310	Name Plate (GX) B	CG-6411	1
13-26	UM568956	Lid Shaft	CP-6014	1
13-27	ZW290283	'U' Ring 2.85M	6-1-1	3
13-28	ZG577901	Lid Spring	CP-6035	1
13-29	UM453060	Hook Lever (2)	CG-6007	1
13-30	ZG469372	Lid Spring B	CG-6053	1

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
	LOWER CASE BLOCK			
13-31	BC571882	Lower Case Block Comp.	CP	1
13-32x	SA484121	Rubber Foot	CT-6024	4
	ASSEMBLY BLOCK			
13-33	BC569092	Wood Frame	CP-6026	1
13-34x	SM569272	Jack Name Plate	CP-6001	1
13-35	SK569237	Slide Knob	CP-6024	4
13-36x	EJ553948	Wire Bundle Holder B (CSA)	2-35-3	3
13-37	SB569136	Direction Button	CP-2018	4
13-38x	EF563681	Fuse 1A 250V	39-1-50	2

When ordering parts, please describe Parts Number, Serial Number, and Model Number in detail.

INDEX

Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.
BA572005	10-1x	EC450055	9-C4	ER212174	8-R13	ER376413	12-69	EZ586574	12-36x
BA572062	11-1x	EC450270	11-C3	ER212174	9-R13	ER379631	9-R3	EZ607680	12-30x
BA572073	8-1x	EC450527	8-C27	ER212264	8-R8	ER380711	9-R44	HE571994	1-20
BA572084	9-1x	EC450527	10-C3, 4	ER212264	8-R15	ER380913	9-R39	HL567066	1-42
BA591434	11-2x	EC456322	8-C6	ER212264	9-R15	ER395460	8-R35	HL567101	1-38
BC569092	13-33	EC456322	9-C10	ER212264	10-R15,16	ER420322	8-R30	HL567595	1-23
BC569103	13-2	EC487157	8-C25	ER212264	10-R26	ER426857	9-R42,43	HL569992	1-8
BC571871	13-1x	EC487157	8-C31	ER212477	9-R2	ER430097	9-R28	HP571983	1-4
BC571882	13-31	EC495865	9-C2	ER212477	9-R5	ER430301	9-R20	HZ567033	1-2
BF566796	7-102	EC516767	8-C4	ER212477	9-R24	ER433877	10-R28	HZ567077	1-43
BF566807	7-103	EC539943	10-C6	ER212883	8-R1	ER440921	12-45x	HZ567112	1-11
BH571972	1-1x	EC556536	10-C11	ER212883	8-R9	ER450011	8-R11	HZ567167	1-3
BJ572051	12-6x	EC565345	11-C1	ER212883	8-R12	ER465276	8-R5	HZ567202	1-19
BL571926	7-1x	EC565830	8-C2	ER212883	8-R17	ER529975	12-46x	HZ567213	1-13
BL571937	7-7x	EC565830	8-C14	ER212883	8-R32	ER536984	11-R1	HZ567235	1-31
BM571904	2-1x	EC565830	8-C18	ER212883	8-R38	ER565301	12-17x	HZ567246	1-34
BM591480	2-2x	EC565830	8-C29, 30	ER212883	10-R6	ER565323	11-R2	HZ567606	1-35
BM591614	2-3x	EC589555	7-127	ER212883	10-R14	ER565356	8-R27	HZ567641	1-37
BR571915	3-1x	ED219464	8-D1, 2	ER212883	10-R33	ER565828	11-FR1	HZ567663	1-33
BS572038	12-1x	ED219464	9-D1	ER213300	8-R26	ER574841	11-FR2	MB415743	3-16
BT517274	8-T1	ED219464	9-D5	ER213300	10-R2	ER617152	11-R3	MB415743	6-17x
BT565288	12-49	ED491130	9-D2	ER214290	12-13x	ER617174	11-R4	MB515518	12-84
BT591221	12-51x	ED494583	11-D1to4	ER304290	8-R3	ER617196	8-R28	MB566583	7-93
BT591232	12-50x	ED494583	10-D11	ER304290	8-R45	ER617218	8-R37	MB566684	7-101
BT591491	12-52x	ED514721	9-D3,4	ER304290	10-R29	ES246025	12-66	MB567437	12-78
BZ571948	4-1x	ED514721	9-D6	ER304402	9-R6	ES379045	12-43x	MB576540	12-79x
BZ571950	5-1x	ED557111	11-D5	ER304402	10-R7	ES389700	5-10	MB577438	6-50
BZ571961	6-1x	ED560913	8-D3 to 8	ER304402	10-R32	ES477966	6-66	MB606082	7-70x
EA391331	2-4	ED560913	10-D1 to 10	ER306360	8-R41	ES479496	6-51	MC565176	6-60
EA457176	12-74	EF277402	12-38x	ER306843	8-R7	ES484154	12-14	MH273295	7-24
EA516047	12-85	EF277413	12-39x	ER306843	9-R27	ES494076	8-SW1	MH457255	6-48
EA567786	6-3	EF338387	12-40x	ER306887	8-R18	ES494076	8-SW3	MH566638	7-20
EA584673	1-44	EF354295	12-35x	ER306887	8-R21,22	ES494302	8-SW2	MH568506	6-49
EA610470	12-29	EF513663	12-34x	ER306887	8-R42	ES499972	12-67x	MH578114	7-21
EC220127	8-C3	EF563681	12-32	ER306887	9-R29	ES499972	12-68x	MH599804	7-19
EC220151	10-C1	EF563681	13-38x	ER306887	9-R32	ES516036	12-86	MI456750	7-3
EC220151	10-C5	EF563692	11-F1	ER306887	9-R41	ES517410	7-116	MI566550	7-80
EC220151	10-C14	EF563692	12-41x	ER315944	10-R30,31	ES539043	7-108	MI566561	7-82
EC220364	8-C17	EF563703	12-33x	ER324720	8-R33	ES565233	12-91	MI566651	7-96
EC220994	10-C7, 8	EJ233370	12-20	ER336442	8-R6	ES565255	12-3	ML566245	7-55
EC250683	9-C5	EJ255093	12-16	ER336442	8-R16	ES565266	12-4	ML566291	7-30
EC250716	8-C8	EJ315281	12-8	ER336442	9-R1	ES565290	4-15	ML566302	7-59
EC250716	8-C12	EJ376604	12-11	ER336442	9-R14	ES568056	6-35	ML566368	7-76
EC250841	10-C12,13	EJ510333	12-94x	ER336442	9-R31	ES589544	6-36	ML566493	6-57
EC251291	9-C15	EJ514822	11-8	ER336442	10-R5	ET391768	8-TR1	ML566548	7-49
EC251291	9-C18	EJ514822	12-31x	ER336442	10-R8	ET398777	10-TR1,2,3	ML566616	7-8
EC251291	9-C20, 21	EJ553948	13-36x	ER336442	10-R18	ET398777	10-TR5,6	ML566820	6-32
EC290520	10-C9, 10	EJ558246	12-44x	ER336442	10-R20	ET491051	9-TR5	ML566831	6-38
EC290531	9-C23	EJ565277	12-42	ER336442	10-R22	ET511694	10-TR8, 9	ML566842	6-73
EC320040	9-C16	EL295312	12-75x	ER342933	8-R24	ET517263	9-TR3	ML568078	7-53
EC320051	8-C9, 10	EL368774	6-4	ER343078	8-R10	ET517263	9-TR6	ML568102	7-47
EC320051	8-C13	EL390576	6-5	ER343078	8-R39	ET520841	8-TR4to8	ML568168	7-113
EC320051	8-C19,20,21	EM565244	12-93	ER343078	8-R44	ET520841	9-TR4	ML568282	6-18
EC320051	8-C26	EO243988	8-L3	ER343078	9-R37	ET520841	9-TR8	ML568348	7-92
EC320051	9-C1	EO368403	8-L1	ER343078	10-R10	ET537300	10-TR7	ML568350	7-88
EC320051	9-C6,7,8	EO368403	8-L4,5	ER346601	9-R4	ET537300	11-TR1	ML568405	7-120
EC320051	9-C14	EO443722	10-L1	ER346601	10-R11	ET557976	9-TR7	ML568416	7-121
EC329051	9-C17	EO496350	9-L1	ER346994	9-R36	ET601323	8-TR2, 3	ML568440	7-28
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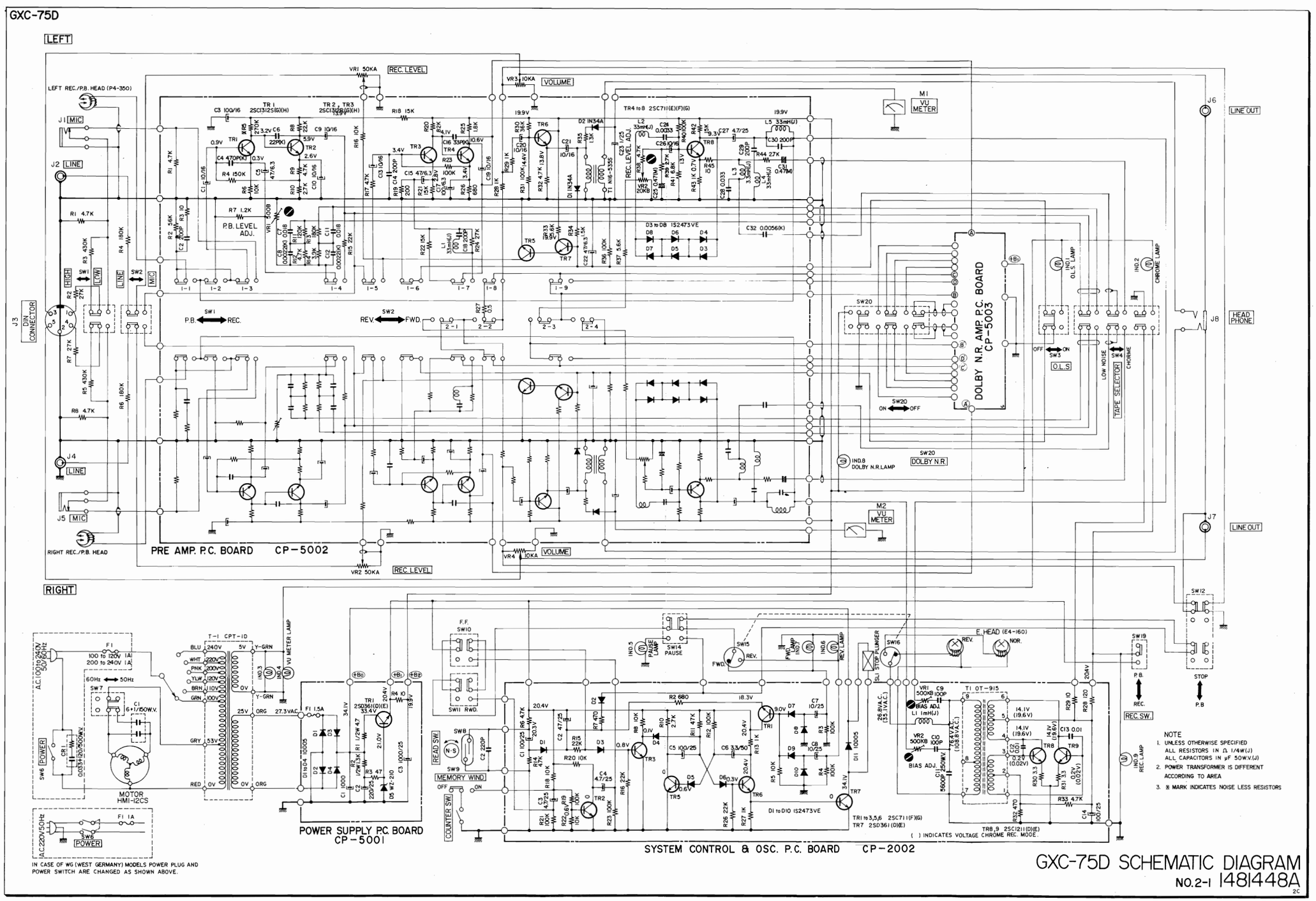
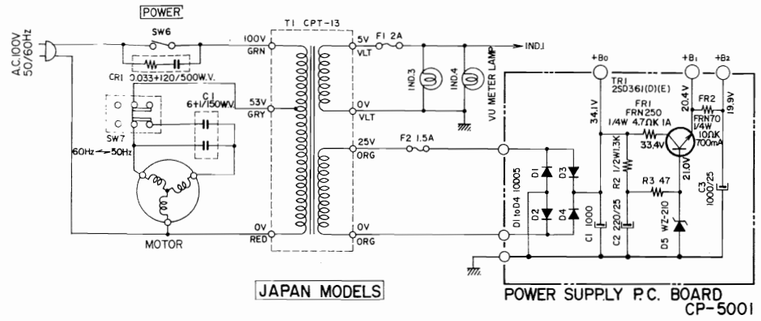


NOTE
1. UNLESS OTHERWISE SPECIFIED
   ALL RESISTORS IN Ω 1/4W(J)
   ALL CAPACITORS IN μF 50V.V.(J)
2. POWER TRANSFORMER IS DIFFERENT ACCORDING TO AREA
3. ※ MARK INDICATES NOISE LESS RESISTORS

GXC-75D SCHEMATIC DIAGRAM

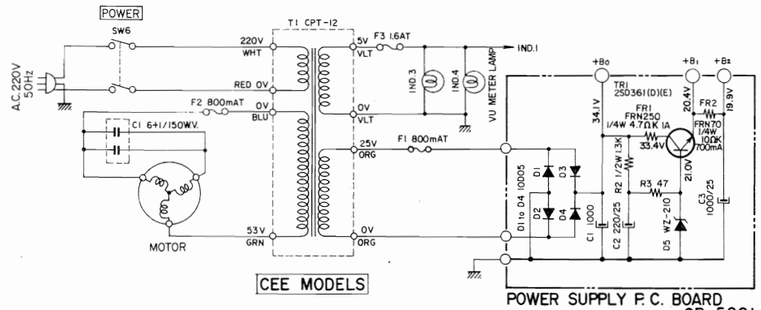
NO.2-1 1481448A 2C

GXC-75D



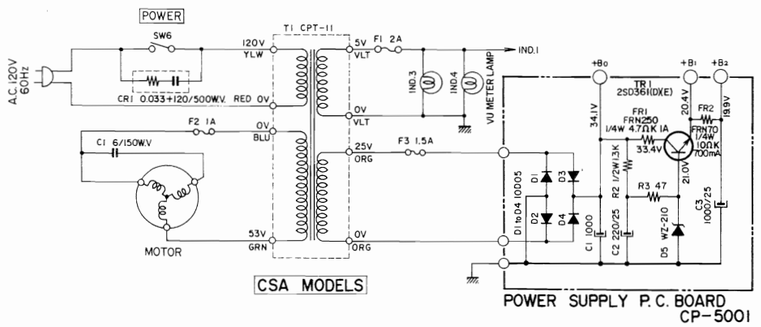
JAPAN MODELS

POWER SUPPLY P.C. BOARD CP-5001



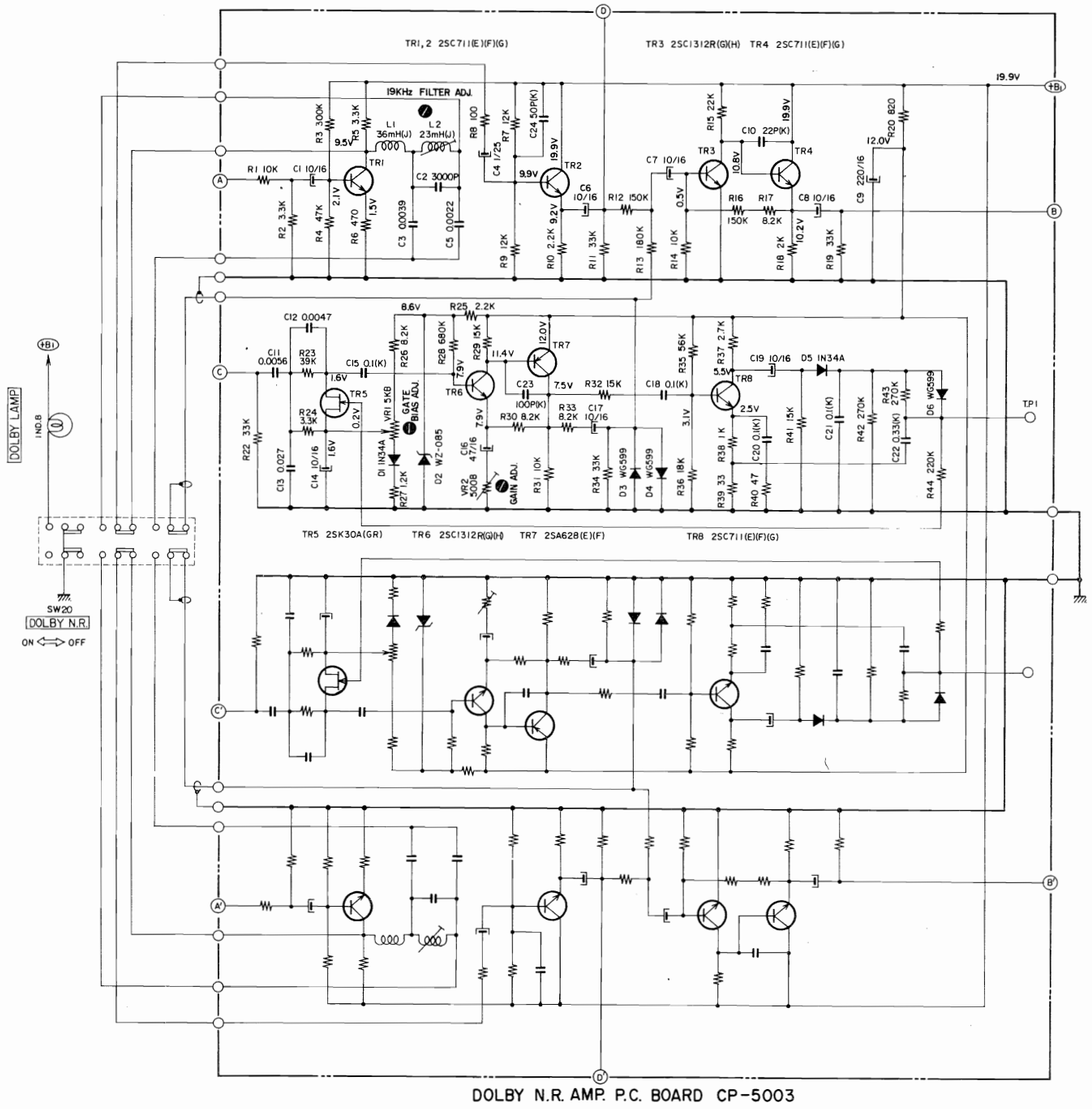
CEE MODELS

POWER SUPPLY P.C. BOARD CP-5001



CSA MODELS

POWER SUPPLY P.C. BOARD CP-5001



DOLBY N.R. AMP. P.C. BOARD CP-5003

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN Ω 1/4 W(J)
ALL CAPACITORS IN μF 50W.V.(J)

GXC-75D SCHEMATIC DIAGRAM NO.2-2 1481449A

2C